

# **11. EOC File Management**

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File management operations within the EOC are performed either through the terminal emulator or with tools provided by the operating system. FOS-supplied menu entries and script files have been added to extend basic capabilities. Refer to operating system documentation for more detailed information. Online help is also available to guide novice users. The methods used to perform specific file management operations are presented in the following text.

## **11.1 UNIX Utilities**

Access to UNIX utilities is available through ECL (Release B). These utilities are usually used to perform file maintenance functions. Brief descriptions of these common commands are presented in the following paragraphs along with examples of typical usage, and if applicable, the ECL directive that accesses the same function. Refer to the operating system documentation for complete information on these and other UNIX utilities.

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# Appendix A. ECS Command Language (ECL)

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## A.1 ECL Syntax and Language Elements

The FOS ECL grammar resulted from a comparison of the grammar and features of various heritage command languages, along with input solicited from operations personnel and developers of heritage control centers. The heritage command languages that were compared included:

- a. CSTOL (OASIS).
- b. PSTOL (PORTS).
- c. PACS STOL (PACS).
- d. SCL (COTS product used on the Clementine Program).
- e. TSTOL (TPOCC).

ECL grammar will implement the following features:

- a. Conditional construct (refer to paragraph A.1.3.1).
- b. Loop constructs (refer to paragraph A.1.3.2).
- c. Nesting of constructs.
- d. Arithmetic and logical operators (refer to paragraph A.1.1.4).
- e. Variables and arrays (refer to paragraph A.1.2.2).
- f. Built-in functions (refer to paragraph A.1.2.3).

### A.1.1 Lexical Elements

#### A.1.1.1 Character Set

ECL constructs may be represented with the basic character set:

- a. Alphabetic characters. A-Z, a-z.
- b. Digits. 0 through 9.
- c. Special characters. "& () \* + - / ! \ ~ % < > = ^ | \_ \$ # : @.
- d. The space character (i.e., a blank).

ECL is case sensitive. This allows users to implement a flexible naming convention for mnemonics, procedures, and variables.

#### A.1.1.2 Identifiers

Identifiers within the ECL are used to specify names of procedures and variables. An identifier can contain up to 32 characters, including any combination of letters (upper and lower case), digits, and underscores. All characters in an identifier are significant, including underscores. Identifiers are case sensitive - upper and lower case letters are not equivalent.

Syntax.

```
identifier = letter{[underscore] letterOrDigit}
```

where:

**letterOrDigit** = letter | digit

**letter** = upperCaseLetter | lowerCaseLetter

Examples.

TOTAL

NumberOfItems

CumTemp

Procedure1

Cum\_Voltage

#### A.1.1.3 Literals

Both numeric and character literals are supported by ECL. Numeric literals can be expressed in the following formats:

- a. Decimal integer.
- b. Hexadecimal.
- c. Octal.
- d. Binary.
- e. Floating point.
- f. Scientific notation.
- g. Time.
- h. Degrees.

A character literal is formed as a character string enclosing one or more ASCII characters between double quotation marks. No spaces are required between literals.

Syntax.

**literal** = numericLiteral | characterLiteral

**numericLiteral** = decimalNumber | realNumber | basedNumber | dateValue | timeValue | degreeValue

**decimalNumber** = integer [exponent]

**integer** = {digit}

**realNumber** = {digit}{dot}{digit}

**exponent** = E [+/-] realNumber | E - realNumber

**basedNumber** = hexNumber | octalNumber | binaryNumber

**hexNumber** = 0xhexInteger

**hexInteger** = 0-9 | A-F

**octalNumber** = 8xoctalInteger

**octalInteger** = 0-7

**binaryNumber** = 2xbinaryInteger

```

binaryInteger = 0 | 1
timeValue = [[hour:]minute:] second
hour = 0-23
minute = 0-59
second = 0.000-59.999
dateValue = year/dayofYear
dayofYear = 1-366
degreeValue = decimalNumber [DEG | RAD]
characterLiteral = "{character}"

```

Examples.

12345	1E6	3.14159
0.5	1.52E+7	1.651E-9
0x32FB	8x712	10:23:45
12: 09	95/232	92 DEG
"ABCD"	"x"	"Sample String"

#### A.1.1.4 Arithmetic and Logical Operators

ECL supports traditional arithmetic and logical operators. Table A-1 lists these operators, including their arity and precedence.

**Table A-1. ECL Arithmetic and Logical Operators (1 of 2)**

Operator	Function	Arity	Precedence
++	Increment variable	unary	1
--	Decrement variable		
!	Logical NOT	unary	2
~	Bitwise complement		
-	Arithmetic negation		
+	Unary plus		
*	Multiplication	binary	3
/	Division		
%	Modulus		
+	Arithmetic addition	binary	4
-	Arithmetic subtraction		
<<	Left shift	binary	5
>>	Right shift		
<	Less than	binary	6
<=	Less than or equal to		
>	Greater than		
>=	Greater than or equal to		

**Table A-1. ECL Arithmetic and Logical Operators (2 of 2)**

Operator	Function	Arity	Precedence
==	Equality		
!=	Inequality		
&	Bitwise AND	binary	7
^	Bitwise exclusive OR	binary	8
x	Bitwise inclusive OR	binary	9
&&	Logical AND	binary	10
xx	Logical OR	binary	11
//	Concatenation	binary	12

### A.1.1.5 Comments

ECL allows users to enter comments within procedures. Comments are preceded by a pound sign (#) and are terminated by the end of the line. A comment may appear on the same line as an executable directive. Multi-line comments must be preceded by a pound sign on each line.

Syntax.

#[{character}]

Examples.

# This is a comment on a separate line

WAIT # This is a comment appended to the end of a directive

### A.1.1.6 Continuation Lines

The ECS Command Language supports the use of continuation lines. A directive line may be continued by ending the line with a backslash (\) character. Any text following the backslash on the same line will be ignored.

### A.1.1.7 Directives

ECL supports the use of directives. A directive is a request or command to perform a specific function. There are two basic categories of directives: spacecraft and instrument commands; and FOS subsystem requests.

#### A.1.1.7.1 Spacecraft and Instrument Command Directives

Using spacecraft and instrument commands is restricted to users who currently have command authority. When a command is entered, it is validated and placed on the list for uplink to the spacecraft.

Syntax.

CMD cmdMnemonic[{{[,]parm=literal | variable}}]

or

cmdMnemonic[{{[,]parm=literal | variable}}] # Short form

where,

CMD (or /) = command directive identifier

cmdMnemonic = command mnemonic

**parm** = parameter identifier (e.g., p1, p2, p3, etc.)

**literal** = literal value (refer to paragraph A.1.1.3)

**variable** = variable reference (refer to paragraph A.1.2.2)

Command mnemonics (cmdMnemonic) will be supplied by spacecraft and instrument developers and are stored in the Project Database (PDB).

Example.

/COM\_TURN\_OFF\_MOI # turn off the master oscillator 1 power for AM-1

Submnemonics are optional and may not be used on all spacecraft.

Users also may specify a command directive by its hexadecimal representation, as follows.

Syntax.

CMD RAW = basedNumber

or

/RAW = basedNumber # Short form

where,

basedNumber = hexadecimal, octal, or binary literal (see Section A.1.1.3)

Example.

/RAW = 0x7BD549A1

Additional directives affecting the spacecraft, such as /LOAD and /DUMP, have a context-specific syntax defined in Table A-3.

### A.1.1.7.2 OS Subsystem Request Directives

FOS subsystem request directives allow users to request services from any FOS subsystem. Some examples of these requests include:

- a. Perform a comparison of a ground image and memory dump.
- b. Display a specified telemetry page.
- c. Execute a local procedure.

Syntax.

instructionCategory [secondaryKeyword [{[,]secondaryKeyword}]] ]

where,

instructionCategory = identifies the request category

secondaryKeyword = a secondary keyword qualifying the instruction. Secondary keywords are specific for each instruction category

Examples.

PAGE MICAM2 # Display the telemetry page MICAM2

START ABC() TIME=11:30:45 Start procedure ABC today at 11:30:45

KILL ABC # terminate procedure ABC

MGCMP DEF.GRI DEF.DMP1 MASK1 start=8x120 stop=8x377 PRT=Y

In the first example, the instruction category is PAGE. In the next two examples, the category identifies the directives as procedure directives. The last example requests an image comparison of a ground reference image file (DEF.GRI) and a dump file (DEF.DMP1). A mask (MASK1) will be used to exclude areas from the comparison. In addition, the comparison will start at address 120 (octal) and end at address 377 (octal). The print option (PRT=Y) requests that the comparison report be sent to the default printer. This request is sent to the Command Management Subsystem for execution.

### A.1.1.8 Reserved Words

ECL includes two categories of reserved words: keywords and built-in function names. Keywords are used to define directives or constructs within the command language grammar. Function names identify predefined system functions, such as trigonometric functions, that may be invoked within a directive. Reserved words cannot be used as identifiers (e.g., a declared variable) within a directive or procedure. Use of a reserved word as an identifier may result in a syntax error. The following reserved words are implemented for the ECL:

ACOS	COS	FIND	JUMP	PAGE	SH	TAN
ASIN	COSH	FOP	KILL	PERSISTENTPAGE	SIN	TANH
ATAN	CV	FOR	LOAD	POW	SINH	TIME
BREAK	DEFAULT	GCMR	LOG	PROC	SNAP	TILED
BYE	DO	GO	LOG10	PROMPT	SQRT	TV
CASE	ELSE	GOTO	LOWRED	PV	START	UNTIL
CLOSE	ENABLE	HELP	LOWYELLOW	RCCONFIG	STRING	WAIT
CMD	END	HIGHRED	MODE	RESUME	SUSPEND	
COMMANDCONFIG	EXP	HIGHYELLOW	MSG	RETURN	SWITCH	
COS	FABS	IF	NCC	ROOM	TAKE	

### A.1.2 Declarations and Types

#### A.1.2.1 Procedures

ECL supports the development and execution of command language procedures. Typically, a procedure consists of a set of directives performing a single function (e.g., place an instrument in safe mode). Procedures begin with a prototype statement and end with a terminating directive. Procedures may accept arguments which are passed by value. Passing of addresses is not supported. A procedures may call another procedure, but recursive procedures are not allowed. In other words, a procedure may not call itself.

Syntax.

**PROC procName ([*argument* [{,.*argument*}]])**

(e.g., Procedure A calls Procedure B; Procedure B then calls Procedure A)

**END PROC *procName***

where,

*procName* = the name of the procedure

*argument* = optional argument passed to the procedure

Example.

**PROC MyProc (int \$A, real \$B)**

ECL provides a set of directives allowing users to control the execution of a procedure. These directives are defined by the following syntax:

Syntax.

START procName [TIME=*timeValue*]

GOTO *procLabel*

WAIT [*absoluteTime* | *relativeTime*]

where,

*procName* = the name of the procedure

*tmeValue* = [[hour:]minute:] second

*procLabel* = a label defined within the procedure

*absoluteTime* = hour:minute:second

*relativeTime* = time value in seconds

Examples.

START XYZ # Start procedure XYZ immediately

GOTO TopOfLoop # Jump to the label TopOfLoop

WAIT 30 # Wait 30 seconds, then resume procedure execution

The procedure start directive can be entered manually by users or invoked from a procedure. The GOTO and WAIT directives also control the execution of a procedure. These directives can only be executed from within a procedure.

### A.1.2.2 Variables

ECL supports the use of local and global variables within a procedure or ground script. There are several types of variables (e.g., integer, string). Local variables are defined within a compound statement (or block). Global variables are used within a procedure to pass status or other values back to the calling body (i.e., procedure or ground script).

#### Syntax for a local variable:

int \$n = 3 (declaration of local variable)

\$n = \$n + 1 (increment value after variable has been declared)

where,

\$ indicates local scope and type is integer

#### Syntax for a global variable:

chars \$\$file = /home/temp (declaration of global variable)

\$\$file = /home/temp/fot (reassign value after variable has been declared)

where,

\$\$ indicates global scope and type is string

### A.1.2.3 Built-In Functions

ECL provides a number of built-in math functions. A built-in function will be invoked in the same manner as a C function. That is, each function will accept arguments (of a specific type) and provide a return value that may be assigned to a variable. Table A-2 identifies built-in ECL functions. The syntax for using a function is as follows:

Syntax.

functionName ([argument [{,argument}]]])

where,

functionName = the name of the built-in function (e.g., sin, cos, strlen)

argument = optional argument passed to the function

Examples.

val 1 = SQRT (10.25) # Returns the square root of 10.25

val 2 = SIN (45) # Returns the sine of 45 degrees

**Table A-2. ECL Built-In Functions**

Function Name	Description
ACOS	trigonometric arc cosine function
ASIN	trigonometric arc sine function
ATAN	trigonometric arc tangent function
COS	trigonometric cosine function
SIN	trigonometric sine function
TAN	trigonometric tangent function
COSH	hyperbolic cosine function
SINH	hyperbolic sine function
TANH	hyperbolic tangent function
EXP	exponential function
LOG	natural logarithm function
LOG10	base-10 logarithm function
POW	power function
SQRT	non-negative square root function
FABS	returns the absolute value

### A.1.2.4 Telemetry Parameter Mnemonics

ECL allows references to telemetry parameter values within a directive. A directive uses a telemetry parameter's mnemonic to reference its value. The mnemonic may be used in comparisons or calculations just as any other variable. However, a mnemonic cannot be used to

store the result of an assignment statement. Users may reference either the formatted (default), decoded, or raw value when specifying the telemetry parameter.

Syntax.

[F | D | R]@parameter

where,

F | D | R = value type (F = formatted, D = Decoded, R = Raw)

@ = indicates that this is a reference to a parameter

parameter = the parameter mnemonic

Examples.

@miCamera # reference the formatted value of the miCamera parameter

R@miCdeT # reference the raw value of the miCdeT parameter

### A.1.3 Programming Constructs

#### A.1.3.1 Conditional Constructs

ECL supports the use of conditional constructs, including if-then-else and switch-case constructs. If-then-else constructs allow for conditional execution of one or more directives. Note that the else if and else constructs are optional.

Syntax.

IF (expression)

{

<directives>

}

[ELSE IF (expression)

{

<directives>

}

ELSE

{

<directives>

} ]

The switch-case construct also allows for executing a block of directives. Each block is delineated by a break directive.

Syntax.

SWITCH (expression)

{

CASE 1:

```
<directives>
BREAK
```

CASE 2:

```
<directives>
BREAK
```

```
.
.
.
```

CASE n:

```
<directives>
BREAK
DEFAULT:
<directives>
BREAK
}
```

The expression in the switch directive must evaluate to an integer value. The default case will be executed if the expression fails to match any specified case. If a break directive is omitted from a case, execution will continue with the directives for subsequent cases until a break directive is encountered, or the end of the switch construct is reached.

### A.1.3.2 Loop Constructs

ECL supports three loop constructs. These include while, a do-until, and a for constructs. The while construct specifies a while loop within a command language procedure. The terminal expression is evaluated at the beginning of each pass through the loop. If the expression is evaluated as false, the loop terminates immediately (i.e., execution branches to the first directive following the end of the loop).

Syntax.

```
WHILE (expression)
{
<directives>
}
```

The do-until construct specifies an until loop within a command language procedure. The terminal expression is evaluated at the end of each pass through the loop. If the expression is evaluated as true, the loop terminates immediately (i.e., execution branches to the first directive following the end of the loop).

Syntax.

```
DO
{
```

```
<directives>
} UNTIL (expression)
```

The for construct specifies a for loop within a command language procedure. An initial expression is executed prior to entering the loop, a terminal expression is evaluated at the beginning of each pass through the loop, and a loop expression is executed at the end of each loop pass. If the terminal expression is evaluated as false, the loop terminates immediately (i.e., execution branches to the first directive following the end of the loop).

Syntax.

```
FOR (initialExpression; terminalExpression; loopExpression)
{
<directives>
}
```

Table A-3 lists ECL directives supported in Release B. These directives are organized by keyword. Each directive is defined in Table A-3 and includes:

- a. The directive keyword.
- b. A brief description of the directive's purpose.
- c. The directive syntax (see conventions below).
- d. Directive examples:
- e. The subsystem that must respond to the directive.

Conventions used to describe the directive syntax are as follows:

- a. Helvetica typeface represents text that must be entered exactly as shown.
- b. *Helvetica italicized text* represent a value chosen by the user from multiple alternative values.
- c. [parm1]\* indicates the parameter may be repeated.
- d. alt1 | alt2 |... alternative values listed without square brackets indicates one of multiple alternatives must be provided.
- e. [alt1 | alt2 [...]] alternative values listed within square brackets indicates one of multiple optional alternatives. The default alternative is underlined.
- f. -- indicates space.
- g. / indicates continuation lines. Details regarding each ECL directive are provided in Table A-3.

**Table A-3. ECL Directives (1 of 19)**

Keyword	ARCHIVE
Description	Controls the telemetry archiving mode. The archive directive allows adjustment of the telemetry archiving mode for a particular configuration.
Syntax	ARCHIVE --   -- TLM -- [ = ENABLE   DISABLE ]   -- CMD -- [ = ENABLE   DISABLE ]   -- EDOS -- [ = ENABLE   DISABLE ]   -- NCC -- [ = ENABLE   DISABLE ]
Example	ARCHIVE TLM = ENABLE Sets the telemetry archiving mode to on.
Subsystem	RMS
Keyword	BREAK
Description	Forces termination of the current loop within a procedure.
Syntax	BREAK
Example	BREAK
Subsystem	FUI
Keyword	BYE
Description	Terminates all FOS applications running at the specified user's workstation.
Syntax	BYE
Example	BYE
Subsystem	FUI
Keyword	CLOCK_CORRELATION
Description	START - starts the clock correlation process ADJUST - disable or enable the USCCS generated automated clock adjust command request. When disabled, the projections of anticipated clock error threshold violations are unaffected and continue to be calculated and described in reports. TABLE - disable or enable the USCCS generated automated TONS MO_AND_CLOCK_TABLE table load update command request. When disabled, the projections of anticipated tons table error threshold violations are unaffected and continue to be calculated and described in reports.
Syntax	<u>CLOCKCORRELATION</u> --   -- START --   STRING = <integerId>   -- SPACECRAFTID = <spacecraftId> -- \ -- MODE = <modelId>   -- ADJUST -- ENABLE   DISABLE   -- TABLE -- ENABLE   DISABLE
Example	CC START STRING=100 or CC START SPACECRAFTID=AMI MODE=OPS Starts the Clock Correlation process on string 100.  CC ADJUST DISABLE Disables the USCCS generated automated clock adjust command request.  CC TABLE ENABLE Enables the USCCS generated automated TONS MO_AND_CLOCK_TABLE table load update command request.
Subsystem	ANA
Keyword	CMD (or /)
Description	Prefix for all spacecraft and instrument real time command directives.

**Table A-3. ECL Directives (2 of 19)**

Syntax	CMD -- <real time command>
Example	CMD COM_TURN_OFF_MO1 Turns off the master oscillator 1 power for AM-1.  /COM_TURN_OFF_MO1 Turns off the master oscillator 1 power for AM-1.
Subsystem	CMD
Keyword	SCMD (or %)
Description	Prefix for all spacecraft and instrument stored command directives, used to show stored commands in the ground script.
Syntax	SCMD -- <stored command>
Example	SCMD COM_TURN_OFF_MO1 Turns off the master oscillator 1 power for AM-1.  %COM_TURN_OFF_MO1 Turns off the master oscillator 1 power for AM-1.
Subsystem	CMD
Keyword	<u>COMMANDCONFIG</u>
Description	The COMMANDCONFIG (CMDCFG) directive allows the operator to configure Command parameters.
Syntax	<u>COMMANDCONFIG</u> --   --PLOP=1   2 -- [CLTUQTY=<integerConstant>]   --RATE=<integerConstant>   --PRIMARY=CTIU-1   CTIU-2   --CLCW=I   Q
Example	COMMANDCONFIG PLOP = 1 Selects CCSDS physical layer protocol to be 1.
Subsystem	RMS
Keyword	CV
Description	Enable or disable command verification checking.
Syntax	CV -- [ ON   OFF]
Example	CV ON Enables command verification checking.
Subsystem	FUI
Keyword	DECOM
Description	Controls the selective decommutation of telemetry parameters. The decom directive allows adjustment of the telemetry decommutation mode for a particular configuration. Available selection types are all, none, subsystem_id, and parameter mnemonic.
Syntax	DECOM -- SEL=<selectTypeList> -- MODE=ON   OFF
Example	DECOM SEL=ALL MODE=OFF Sets the decommutation mode to off for all telemetry parameters.  DECOM SEL=12345 MODE=ON Sets the decommutation mode to "on" for telemetry parameter 12345.
Subsystem	RMS

**Table A-3. ECL Directives (3 of 19)**

Keyword	DERIVED
Description	Controls the evaluation and update rate of derived telemetry parameters. The derived directive allows the equation processing intervals to be adjusted. Setting an interval to a value of zero disables derived parameter processing. The equation processing rate is based upon spacecraft time extracted from telemetry.
Syntax	DERIVED -- <mnemonic> -- RATE -- [ = <seconds> ]
Example	DERIVED 12345 RATE=30 Sets the processing rate for telemetry parameter 12345 to 30 spacecraft seconds.
Subsystem	RMS
Keyword	DO-UNTIL
Description	A iteration statement within a procedure.
Syntax	DO { <directives> } UNTIL -- (<expression>)
Example	DO { x++ } UNTIL (x > 10) Increments a local variable x until x is greater than 10.
Subsystem	FUI
Keyword	DROPOUT
Description	Controls the sensing rate for the detection of a loss of an input telemetry stream. The dropout directive allows the dropout sensing interval to be displayed and adjusted. Setting the interval to a value of zero disables dropout detection.
Syntax	DROPOUT -- [= <seconds>]
Example	DROPOUT=10 Sets the dropout interval to 10 seconds.
Subsystem	RMS
Keyword	EDOS
Description	The EDOS Communications Test Request will be issued just prior to each spacecraft contact to determine the operational readiness of the EDOS communications link.  There will be no user specified fields associated with this message. The outgoing message will be generated using database, and configuration defined information.
Syntax	EDOS - -  - -COMMTEST [TIMEOUT = <integer>]
Example	EDOS COMMTEST
Subsystem	RMS
Keyword	EU
Description	Controls the coefficients for polynomial engineering unit conversion equations of telemetry parameters. Used to change the coefficient values of EU equations. Used to indicate the type of a particular EU conversion.

**Table A-3. ECL Directives (4 of 19)**

Syntax	<pre>EU -- &lt;mnemonic&gt; --   --SEL = &lt;convId&gt;   -- CONVERSION=&lt;convId&gt; --\ [ C0=&lt;coeffValue&gt; ] --\ [ C1=&lt;coeffValue&gt; ] --\ [ C2=&lt;coeffValue&gt; ] --\ [ C3=&lt;coeffValue&gt; ] --\ [ C4=&lt;coeffValue&gt; ] --\ [ C5=&lt;coeffValue&gt; ] --\ [ C6=&lt;coeffValue&gt; ] --\ [ C7=&lt;coeffValue&gt; ]</pre>
Example	<p>EU 12345 SEL=2  Selects the second conversion equation for telemetry parameter 12345.</p> <p>EU 12345 CONVERSION=2 C5=10  Sets the C5 coefficient value for the second EU conversion for parameter 12345 if the selected conversion algorithm is a polynomial.</p>
Subsystem	RMS
Keyword	EXPERT_ADVISOR
Description	Disable or enable the Expert Advisor.
Syntax	<pre>EXPERTADVISOR --   -- ENABLE --[ STRING = &lt;integerConstant&gt; ]--\ [ VERSION = &lt;characterConstant&gt; ]   -- DISABLE</pre>
Example	<p>EA DISABLE  Disables the Expert Advisor.</p>
Subsystem	ANA
Keyword	FIND
Description	With this directive a user can make sure files exist. The results of this directive will be displayed in an event message.
Syntax	FIND -- <directory name> -- <fileName>
Example	<p>FIND Uplink_Dir AM1_Ephemeris.TBL  Checks if file 'AM1_Ephemeris.TBL' exists in directory 'Uplink_Dir'.</p>
Subsystem	FUI
Keyword	FOP
Description	The FOP directives permit the operator to configure the Frame Operation Procedure (FOP) segment of the CCSDS uplink protocol.
Syntax	<pre>FOP--   --<u>INITIATE</u>-- CHECK   NOCHECK   UNLOCK   VR=&lt;nextExpectedFrameSequenceNumber&gt;   --<u>TRANSMIT</u>=&lt;transmissionLimit&gt;   --<u>WINDOW</u>=&lt;&gt;windowWidth&gt;   --VS=&lt;nextExpectedFrameSequenceNumber&gt;   --TIMER=&lt;timeoutValueInSeconds&gt;   --TIMEOUTTYPE=ALERT   SUSPEND</pre>
Example	<p>FOP RESUME_AD  Resumes AD service, placing the FOP back into the state it previously was in.</p>
Subsystem	RMS
Keyword	FOR
Description	Specifies a for loop within a procedure.

**Table A-3. ECL Directives (5 of 19)**

Syntax	FOR -- (<initialExpression>; <terminalexpression>; <loopExpression>) { <directives> }
Example	FOR (x=0; x < 10; x++) { x=x+2; } This for loop increment the local variable x by 2 until the x value is larger than or equal to 10.
Subsystem	FUI
Keyword	GCMR
Description	The NCC Ground Control Message Request (GCMR) are used to communicate real-time modification requests from the EOC to the NCCDS.
Syntax	<pre> GCMR --   -- REACQUISITION -- LINK = &lt;linkId&gt; -- SUPPORT = &lt;supportType&gt;           -- SWEEP -- LINK = &lt;linkId&gt;           -- EIPRRECONFIG -- LINK = &lt;linkId&gt; -- POWER = &lt;powerMode&gt;           -- EXPAND -- LINK = &lt;linkId&gt;           -- RECONFIG --  --MA --  -- FORWARD -- [ANTENNA = &lt;antennaType&gt; ] --\                       [RATE = &lt;dataRate&gt; ] --\                       [FREQ = &lt;frequency&gt; ] --\                       [DOPCOMP = &lt;requireId&gt; ]           -- RETURN -- [LINK = &lt;linkId&gt; --] \                       [ANTENNA = &lt;antennaType&gt; ] --\                       [IRATE = &lt;dataRate&gt; ] --\                       [QRATE = &lt;dataRate&gt; ] --\                       [FREQ = &lt;frequency&gt; ] --\                       [MAXEIRP = &lt;eirpSign&gt; ] --\                       [MINEIRP = &lt;eirpSign&gt; ] --\                       [RATIO = &lt;i_q_powerRatio&gt; ] --\                       [IFORMAT = &lt;formatId&gt; ] --\                       [QFORMAT = &lt;formatId&gt; ] --\                       [IJITTER = &lt;bitJitterId&gt; ] --\                       [QJITTER = &lt;bitJitterId&gt; ] --\                       [G2INVERSION = &lt;inversionId&gt; ] --\                       [QG2INVERSION = &lt;inversionId&gt; ] -- \                       [MODE = &lt;modelId&gt; ] --\                       [NULLREQ = &lt;nullFlag&gt; ] --\                       [ISTREAM = &lt;streamId&gt; ] --\                       [QSTREAM = &lt;streamId&gt; ]           --SSA --  -- FORWARD -- [LINK = &lt;linkId&gt; ] --\                       [ANTENNA = &lt;antennaType&gt; ] --\                       [RATE = &lt;dataRate&gt; ] --\                       [FREQ = &lt;frequency&gt; ] --\                       [POLAR = &lt;polarizationType&gt; ] --\                       [PNMOD = &lt;cmdPnModId&gt; ] </pre>

**Table A-3. ECL Directives (6 of 19)**

Syntax (continued)	<pre>   -- RETURN --   -- [LINK = &lt;linkId&gt; --\     [ANTENNA = &lt;antennaType&gt; ] --\     [IRATE = &lt;dataRate&gt; ] --\     [QRATE = &lt;dataRate&gt; ] --\       [FREQ = &lt;frequency&gt; --\       [POLAR = polarizationType ] --\     [MAXEIRP = eirpSign ] --\     [MINEIRP = &lt;eirpSign&gt; ] --\     [RATIO = &lt;i_q_powerRatio&gt; ] --\     [IFORMAT = &lt;formatId&gt; ] --\     [QFORMAT = &lt;formatId&gt; ] --\     [IJITTER = &lt;bitJitterId&gt; ] --\     [QJITTER = &lt;bitJitterId&gt; ] --\     [DATAGROUP = &lt;groupId&gt; ] --\     [IG2INVERSION = &lt;inversionId&gt; ] --\     [QG2INVERSION = &lt;inversionId&gt; ] --\     [ISTREAM = &lt;streamId&gt; ] --\     [QSTREAM = &lt;streamId&gt; ]   --KSA --   -- RETURN -- [LINK = &lt;linkId&gt; ] --\     [IRATE = &lt;dataEate&gt; ] --\     [QRATE = &lt;dataEate&gt; ] --\     [FREQ = &lt;frequency&gt; ] --\     [POLAR = &lt;polarizationType&gt; ] --\     [MAXEIRP = &lt;eirpSign&gt; ] --\     [MINEIRP = &lt;eirpSign&gt; ] --\     [AUTOTRACK = &lt;autotrackFlag&gt; ] --\     [RATIO = &lt;i_q_powerRatio&gt; ] --\     [IFORMAT = &lt;formatId&gt; ] --\     [QFORMAT = &lt;formatId&gt; ] --\     [IJITTER = &lt;bitJitterId&gt; ] --\     [QJITTER = &lt;bitJitterId&gt; ] --\     [DATAGROUP = &lt;groupId&gt; ] --\     [DG1MODE = &lt;modelId&gt; ] --\     [DG2TYPE = &lt;typeId&gt; ] --\     [IG2INVERSION = &lt;inversionId&gt; ] --\     [QG2INVERSION = &lt;inversionId&gt; ] --\     [ISTREAM = &lt;streamId&gt; ] --\     [QSTREAM = &lt;streamId&gt; ]    -- DOPPLERCOMP -- LINK = &lt;linkId&gt; -- INHIBIT = &lt;inhibitCode&gt; </pre>
Example	GCMR SWEEP LINK = MA Sends a request to NCC to configure the TDRS session.
Subsystem	RCM
Keyword	GO
Description	Resumes the execution of a procedure that is in a 'WAIT' state.
Syntax	GO
Example	GO
Subsystem	FUI

**Table A-3. ECL Directives (7 of 19)**

Keyword	GOTO
Description	Causes a branch to the specified label within a procedure.
Syntax	GOTO -- <label>   <lineNumber>
Example	LABEL_1: : : GOTO LABEL_1
Subsystem	FUI
Keyword	HELP
Description	Displays the Help utilities.
Syntax	HELP
Example	HELP
Subsystem	FUI
Keyword	IF-THEN-ELSE
Description	Specifies an if-then-else construct. Allow for conditional execution of one or more directives.
Syntax	IF -- (<expression> { <directives> } [ELSE IF -- (<expression> { <directives> }]*) [ELSE { <directives> }]
Example	IF ( x == 0) { x = 1 }
Subsystem	FUI
Keyword	IMGCMP
Description	Image compare. Compares two image files. Dump image file can be compared to either a dump image, a ground image, or a load image file. Ground image file can be compared to either a dump image, or another ground image file. A mask file is needed to specify the area that does not need to compare.

**Table A-3. ECL Directives (8 of 19)**

Syntax	<pre>IMGCMP -- &lt; ATC   RTS   TABLE   FS   MP &gt; --   -- DUMP =&lt;imageFile1&gt; -- \     DUMP   LOAD =&lt;imageFile2&gt; -- \     MASK=&lt;maskFileName&gt; -- \     [ START=&lt;startAddress&gt; END=&lt;endAddress&gt; ] -- \     [ OUTPUT = &lt;outputFile&gt;]    -- GROUND -- \     DUMP   LOAD =&lt;imageFile1&gt; -- \     MASK=&lt;maskFileName&gt; -- \     [ START=&lt;startAddress&gt; END=&lt;endAddress&gt; ] -- \     [ TABLE = &lt;tableName&gt; ] [ RTS = &lt;rtsName&gt; ] -- \     [ OUTPUT = &lt;outputFile&gt;]    -- LOAD =&lt;imageFile1&gt; -- \     LOAD =&lt;imageFile2&gt; -- \     MASK=&lt;maskFileName&gt; -- \     [ START=&lt;startAddress&gt; END=&lt;endAddress&gt; ] -- \     [ OUTPUT = &lt;outputFile&gt;]</pre>
Example	IMGCMP RTS GROUND DUMP=file1.dmp RTS=RTS085 OUTPUT=compare.rpt Compares dump image file 'file1.dmp' with ground image file RTS085, writes result to compare.rpt.
Subsystem	CMS
Keyword	IMGOVER
Description	Image overwrite. Overwrites ground image file with either a dump image or load image file.
Syntax	<pre>IMGOVER &lt; ATC   RTS   TABLE   FS   MP &gt; -- \     DUMP   LOAD=&lt;imageFile1&gt; -- \     [ START=&lt;startAddress&gt; END=&lt;endAddress&gt; ] -- \     [ TABLE = &lt;tableName&gt; ] [ RTS = &lt;rtsName&gt; ]</pre>
Example	IMGOVER ATC DUMP=file1 START = 228 END = 1047 Overwrites ATC ground reference image with dump image file 'file1' from address 228 to 1047.
Subsystem	CMS
Keyword	IMGRPT
Description	Image report. Generates report of load or dump or ground image contents.
Syntax	<pre>IMGRPT -- &lt; ATC   RTS   TABLE   FS   MP &gt;-- --&lt;fileName&gt; -- [ START=&lt;startAddress&gt; -- \       \       END=&lt;endAddress&gt; ]   -- GROUND -- [ START=&lt;startAddress&gt; -- \       \       END=&lt;endAddress&gt; ]</pre>
Example	IMGRPT RTS file1 Generates RTS report of 'file1' contents.
Subsystem	CMS
Keyword	KILL
Description	Kills an executing procedure.
Syntax	KILL -- <procedure name>
Example	KILL XYZ Terminate procedure XYZ.

**Table A-3. ECL Directives (9 of 19)**

Keyword	LIMITS
Description	Controls the limit sensing of telemetry parameters. Used to enable/disable reporting limit messages and alarms. Used to change individual limit values and to control the frequency of limit messages.
Syntax	<pre> LIMITS --   -- &lt;mnemonic&gt; --  -- DELTA =&lt;limitValue&gt;--\             [MESSAGE=ON OFF] --\             [ALARM=ON OFF] --\             [FREQUENCY=&lt;freqValue&gt;]              [TYPE=&lt;limitType&gt;] --\             [GROUP=&lt;groupId&gt;] --\             [HL=&lt;limitValue&gt;] --\             [LL=&lt;limitValue&gt;] ]]              -- ON   OFF -- &lt;subsystem&gt; -- ON   OFF -- ON   OFF </pre>
	<p>LIMITS ON Turns alarms and messages on for all subsystems.</p> <p>LIMITS ASTER ON Turns alarms and messages on for ASTER subsystem.</p> <p>LIMITS 12345 DELTA=10 Sets the delta limit for parameter 12345 to 10.</p> <p>LIMITS 12345 SEL=3 Selects range limit group three for telemetry parameter 12345.</p> <p>LIMITS 12345 RAW GROUP=2 TYPE=YELLOW LL=10 Sets the yellow-low value for the second group of range limits if that group checks raw telemetry values.</p>
Subsystem	RMS
Keyword	LOAD
Description	Initiates a memory load. The load Id that will be uplinked can be entered as actual file name or a string variable. The partition indicator and partition amount can be entered as an integer or an integer variable.
Syntax	LOAD -- <loadId> -- <partitionIndicator> -- <partitionAmount>
Example	<p>LOAD AM1_RTS_SAFETYSEQUENCE 3 5 Loads AM1_RTS_SAFETYSEQUENCE_3_OF_5 (partition number 3 of 5).</p> <p>LOAD \$file \$x \$y Loads AM1_RTS_SAFETYSEQUENCE_3_OF_5 (partition number 3 of 5) - where \$file was declared as AM1_RTS_SAFETYSEQUENCE and \$x and \$y were declared as 3 and 5 respectively.</p>
Subsystem	CMD
Keyword	MODE
Description	Sets the command confirmation mode. When set to STEP, each command directive must be confirmed by either a subsequent send or cancel directive.
Syntax	MODE -- AUTO   STEP

**Table A-3. ECL Directives (10 of 19)**

Example	MODE STEP Sets the command confirmation mode to STEP.
Subsystem	FUI
Keyword	MSG
Description	Generates a user-specified event message.
Syntax	MSG -- <messageText>
Example	MSG "Pre-pass briefing in 5 minutes."
Subsystem	FUI
Keyword	NCC
Description	The NCC Communications Test Request will be issued just prior to each spacecraft contact to determine the operational readiness of the NCC communications link. There will be no user specified fields associated with this message. The outgoing message will be generated using database and configuration defined information. The NCC User Performance Data Request message provides the EOC with the capability to enable or disable the User Performance Data Message.
Syntax	NCC --   -- COMMTEST – GCMR   UPD   -- UPD – ENABLE   DISABLE
Example	NCC COMMTEST UPD Send a communication test message to NCC UPD Service.  NCC COMMTEST GCMR Send a communication test message to NCC Reconfig Service.  NCC UPD ENABLE Send a UPD enable request to NCC UPC Service.
Subsystem	RMS
Keyword	<u>PACKETGEN</u>
Description	STARTDATA - starts a stream of data Note: Before STARTDATA is sent to the packet generator, the user must already started the packet generator for a particular data type (Housekeeping, Health&Safety, Standby, 16k Dump, or 1K Dump). CHANGE - changes the data value for a specified PID AREA -
Syntax	<u>PACKETGEN</u> --   -- STARTDATA -- [CHANNEL]   -- CHANGE --   -- PID = <pidValue> -- VALUE = <dataValue>-- \ -- [CHANNEL = <channelId> ] -- \ -- [PKTNO = <packetNumber> ] -- \ -- [OCCUR = <occurrenceNumber> ]    -- AREA = <areaValue> -- \ OFFSET = <integerValue> -- \ LENGTH = <integerValue> -- \ VALUE = <dataValue> --   -- [CHANNEL = <channelId> ] -- \ [PKTNO = <packetNumber>]

**Table A-3. ECL Directives (11 of 19)**

Example	<u>PACKETGEN</u> STARTDATA Starts a stream of data.  <u>PACKETGEN</u> CHANGE 1078 PKTNO = 28 OCCUR = 2 VALUE = 255 Changes the value of the second occurrence of PID 1078 in packet number 28 to 255.  <u>PACKETGEN</u> CHANGE AREA = SERVICE   PRIMARY   SECIBDART   DATA OFFSET = 1 LENGTH = 16 VALUE = 255 Changes the value of all occurrences of PID 1078 in all packets to 255.
Subsystem	TLM
Keyword	PAGE
Description	This directive controls the pages in a room. With this directive a user may open, close, delete, freeze, unfreeze, move and resize, set the update rate, raise, lower, iconify and restore a page.
Syntax	<u>PAGE</u> -- --<pageName>  --CLOSE-- --<pageName>  --ALL  --PID = <pageId>  --DELETE--<pageName>  --FREEZE-- --<pageName>  --ALL  --UNFREEZE-- --<pageName>  --ALL  --MOVERESIZE--<pageName>--<x>--<y>--<width>--<height>  --UPDATERATE--<pageName>  ALL--<rate>  --RAISE--<pageName>  --LOWER--<pageName>  --ICONIFY--<pageName>  --RESTORE--<pageName>
Example	PAGE CLOSE ALL Closes all the pages on screen.  PAGE MiPower Opens the MiPower page in the current room.  PAGE FREEZE MiPower Freezes the MiPower page (all page display updates are suspended).
Subsystem	FUI
Keyword	PROMPT
Description	Prompts user for a Yes/No response to a question.
Syntax	PROMPT, -- <questionText>, -- <answerVariable>
Example	PROMPT, 'Shut down MISR Cameras (Y/N)?', \$confirmFlag
Subsystem	FUI
Keyword	PSC
Description	Enable or disable prerequisite state checking.
Syntax	PV -- [ ON   OFF ]
Example	PSC ON
Subsystem	RMS/FUI

**Table A-3. ECL Directives (12 of 19)**

Keyword	RCCONFIG
Description	The Real-Time Contact Ground Configuration Change Request will be issued when an FOT user wishes to change the value of a particular user controllable real-time contact ground configuration parameter.
Syntax	RCCONFIG -- STRING = <stringId> --   -- TDRS = <tdrsId>   -- EDOSARCHIVE   NCCARCHIVE = ON   OFF
Example	RCCONFIG STRING = 123 TDRS=TDE Reconfigures TDRS id to TDE for string 123 in RCM subsystem.  RCCONFIG STRING = 123 EDOSARCHIVE = ON Turns on EDOS archive mode for string 123 in RCM subsystem.
Subsystem	RCM
Keyword	REQUESTMANAGER
Description	SHOWID - returns the local workstation's id.  SHOWSTATE - returns the current state of the Request Manager for a specified workstation. The state of a Request manager is the classification of Analysis Requests the Request manager will allow to be processed on its workstation. The possible states are: INACTIVE - the local workstation will not accept any Analysis Requests to be processed LOCAL - the local workstation will accept only locally constructed Analysis Requests to be processed. EOC - the local workstation will accept for processing only those Analysis Requests constructed from an EOC workstation GLOBAL - the local workstation will accept for processing an Analysis Request constructed from either IST or EOC workstations.  CHANGESTATE - changes the state of the specified workstation from its current state to a specified state.
Syntax	<u>REQUESTMANAGER</u> --   -- SHOWID   -- SHOWSTATE -- [<localWorkstationId>   <workstationId>]   -- CHANGESTATE -- CURRENT=<currentState> -- \ NEW=<newState> -- \ [<localWorkstationId>   <workstationId> ]
Example	RM SHOWID Returns the local workstation's id.  RM SHOWSTATE 32 Returns the state of the Request Manager on workstation 32.  RM SHOWSTATE Returns the state of the Request Manager on the local workstation.  RM CHANGESTATE CURRENT=INACTIVE NEW=LOCAL Changes the state of the Request Manager on the local workstation from INACTIVE to LOCAL.  RM CHANGESTATE CURRENT=INACTIVE NEW=EOC 32 Changes the state of the Request Manager on workstation 32 from INACTIVE to EOC.  NOTE: only the CAC can change the state of a non-local EOC workstation.
Subsystem	ANA

**Table A-3. ECL Directives (13 of 19)**

Keyword	RESUME
Description	Resumes the execution of a suspended procedure.
Syntax	RESUME -- <procedureName>
Example	RESUME XYZ Resume execution of procedure XYZ.
Subsystem	FUI
Keyword	RETURN
Description	Exits a nested procedure.
Syntax	RETURN
Example	RETURN
Subsystem	FUI
Keyword	ROOM
Description	This directive controls the room in a user's environment. With this directive a user may change to the default, modified or tiled state of a room. Other options allow a user to delete, freeze, unfreeze, save, snap, set the update rate, and set the tiled or default state of a room.
Syntax	ROOM-- --<roomName>--[DEFAULT MODIFIED TILED]  --DELETE--<roomName>  --FREEZE  --UNFREEZE  --SAVE  --SNAP  --UPDATERATE--[ALL]--<rate>  --SETDEFAULT  --SETTILED
Example	ROOM FREEZE Freezes the current room (all display updates are suspended).  ROOM MiCam2 DEFAULT Displays the MiCam2 in the default setting.
Subsystem	FUI
Keyword	SH
Description	Executes a UNIX shell command.
Syntax	SH -- <unixCommand>
Example	SH 'cp file1 file2' Copies file1 to file2.
Subsystem	FUI
Keyword	START
Description	Starts the execution of a procedure. This directive can be entered manually by a user or invoked from a procedure. Other options allow a user to specify the execution time, procedure location, and to indicate whether it is an emergency procedure. By default, starting a procedure will invoke the Procedure Control window. A user may run the procedure in the background by appending an ampersand (&) to the START directive.

**Table A-3. ECL Directives (14 of 19)**

Syntax	Release A: START -- <procedureName> -- [TIME = <timeValue> ]  Release B: START -- <procedureName> -- [TIME = <timeValue> ] --\br/> <u>[ OPER   LOCAL ]</u> -- [EMER] -- [NOPCW]
Example	START XYZ TIME=23:00:00 Starts a procedure XYZ (operational version) at time 23:00:00.  START ABC LOCAL Starts a procedure ABC (local version).
Subsystem	FUI
Keyword	STATE
Description	Controls the execution of spacecraft state checking and capturing.
Syntax	STATE --   -- BASELINE   -- EVALUATE   -- LOAD -- [TIME = <YYYY:DDD:HH:MM:SS[.sss]>]   -- CHANNEL = <channelType>
Example	STATE BASELINE Replaces the expected state table values with current telemetry values.  STATE EVALUATE Starts spacecraft state check comparison.  STATE LOAD Selects current table to be used as the expected state.  STATE LOAD TIME = 1997:230:12:30:20 Selects table from 1997 day 230 at 12:30 and 20 seconds to be used as expected state.  STATE CHANNEL = Q Selects channel Q to be the input source for parameters to be state checked.
Subsystem	TLM

**Table A-3. ECL Directives (15 of 19)**

**Table A-3. ECL Directives (16 of 19)**

Subsystem	RMS
Keyword	SUSPEND
Description	Suspends the execution of a procedure.
Syntax	SUSPEND -- <procedureName>
Example	SUSPEND XYZ Suspend procedure XYZ.
Subsystem	FUI
Keyword	SWITCH-CASE
Description	A multiway branch based on the value of a control expression.
Syntax	<pre>SWITCH -- (&lt;expression&gt; {     [CASE -- &lt;constantExpression&gt;:         &lt;directives&gt;]*     [DEFAULT:         &lt;directives&gt;] }</pre>
Example	<pre>SWITCH (\$flag) {     CASE 0:         \$flag = 1      # Sets the global variable flag to 1 if it is 0.         BREAK     CASE 1:         \$flag = 0      # Sets the global variable flag to 0 if it is 1.         BREAK }</pre>
Subsystem	FUI
Keyword	TBLCMP
Description	Table compare. Compares table dump image with database defined table default values.
Syntax	TBLCMP -- <tableDumpFile>
Example	TBLCMP AM1_TBL_TABLE1.DMP Compares table dump image file 'AM1_TBL_TABLE1.DMP' with database defined default values for table 'TABLE1'.
Subsystem	CMS
Keyword	TAKE
Description	The TAKE Privilege Request will be issued by an FOT user for the purpose of acquiring the specified privilege. A different authorization is required for each individual privilege.

**Table A-3. ECL Directives (17 of 19)**

Syntax	TAKE --  -- COMMAND -- STRING = <stringId>   -- GROUNDCONTROL -- STRING = <stringId>
Example	TAKE GROUNDCONTROL STRING=100
Subsystem	RMS
Keyword	TOOL
Description	The TOOL directive allows user to activate one of the FUI-provided tools.
Syntax	TOOL --  -- Analysis_Request_Builder   -- Analysis_Status   -- ATC_Display   -- Command_Control   -- Command_Request   -- Data_Mover   -- Data_Src_Selecter   -- Display_Builder   -- Doc_Reader   -- E_Mail   -- Event_Display   -- GS_Display   -- Load_Manager   -- Procedure_Builder   -- Quick_Analysis   -- Quick_Msg   -- Replay_Control   -- Report_Browser   -- Room_Builder   -- RTS_Display   -- RTS_Load_Builder   -- Std_Order_Browser   -- Table_Load_Builder   -- Table_Load_Builder   -- User_Customization
Example	TOOL Procedure_Builder Activates the procedure builder.
Subsystem	FUI
Keyword	TV
Description	Enable or disable telemetry verification checking.
Syntax	TV -- [ ON   OFF ]
Example	TV ON
Subsystem	FUI

**Table A-3. ECL Directives (18 of 19)**

Keyword	WAIT
Description	Causes execution of a command procedure or ground script to pause. Execution will resume when either the time condition is reached, the expression evaluates to true, or a "GO" directive is encountered. The wait duration may be an absolute time, a relative time, or based upon a conditional statement. It can only be executed from within a procedure.
Syntax	WAIT -- [ (<conditionalStatement>)   <hh:mm:ss>   <sss> ]
Example	<p>WAIT (@GNC_VR_ST2_P5V == 1)      Waits until the telemetry parameter is equal to 1.</p> <p>WAIT 23:00:00      Waits until the absolute time 23:00:00 is reached.</p> <p>WAIT 30      Waits for 30 seconds.</p> <p>WAIT      Waits until a "GO" directive is issued.</p>
Subsystem	FUI
Keyword	WHILE
Description	An pre-test iteration statement within a procedure.
Syntax	WHILE (<expression>) { <directives> }
Example	<p>WHILE (x &lt;= 10)      {          x++      }</p> <p>While x is less than or equal to 10, increments the local variable x.</p>
Subsystem	FUI

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## Appendix B. Event Message Definitions

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***Table B-1. Event Message Definitions***

ID	Type	Name	Background	Trigger	Process
1	1	FaCEvRTDataServInit	RTworks Data Server has started	2	
2	1	FaCEvRTDataServErr	RTworks ERROR - Refer to %s.	3	
3	1	FaCEvAnalysisProcessStarted	Analysis Request %i has started on host %s	2	
4	1	FaCEvAnalysisProcessFailed	The Analysis Process %i on host %s has failed. The reason is: %s	2	
5	1	FaCEvAnalysisProcessCompleted	The Analysis Process %i has successfully completed on host %s.	2	
6	1	FaCEvReqManStarted	Analysis Request Manager started on host %s.	2	
7	1	FaCEvReqManEnded	Analysis Request Manager stopped on host %s.	2	
8	1	FaCEvReqManStateChange	Analysis Request Manager changed state to %s on host.	2	
9	1	FaCEvInvalidParameter	The analysis process %s encountered an invalid parameter request for PID %i	2	
10	1	FaCEvAnaRequestInitError	%s on host %s cannot start Analysis Request %i. Reason: %s	4	
11	1	FaCEvRTDataServEnd	RTworks Data Server has stopped.	2	
13	1	FaCEvCurrentRddValue	The Current RDD clock error for %s in %r milliseconds, accurate to 20 milliseconds.	1	
14	1	FaCEvRddErrorValue	An RDD clock error calculation was made for %. The average error for the recent contact is %r milliseconds, accurate to 20 milli	1	
15	1	FaCEvMinuteRddValue	The Current RDD clock error for %s is %r milliseconds, accurate to 20 milliseconds	1	
16	1	FaCEvRddAnomalousValue	The low-resolution RDD method has detected a non-zero clock error for %s, implying that the SC clock bias for has exceeded missi	1	
17	1	FaCEvFileOpenForWriteError	Cannot open file %s for write	2	
18	1	FaCEvNoRequestParametersSpecified	No parameters specified in Analysis Request %i	2	
19	1	FaCEvFileOpenError	Error opening %s	2	
20	1	FaCEvPacketTimePidFailed	Error getting the packet time pid	4	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
21	1	FaCEvDatasetReadError	Error reading %s, partial data loss possible	2	
22	1	FaCEvDatasetOffsetError	Error obtaining offsets for pid %i	2	
23	1	FaCEvDatasetOffsetFatalError	No offsets available for selected pids	4	
24	1	FaCEvSetFilePositionFailed	Could not set file pointer	4	
25	1	FaCEvPartialDatasetRequest	Dataset request only partially filled due to %s	2	
26	1	FaCEvOrbitEventFailed	Error getting orbit data from database	4	
27	1	FaCEvNoDailyFilesFound	Daily stats data file not found	4	
28	1	FaCEvMetaFileReadError	Error reading meta data for %s	3	
29	1	FaCEvFailedGettingPids	Error getting pids from %s	4	
30	1	FaCEvErrorAddingParameter	Error adding pid %i to analysis parameter list	2	
31	1	FaCEvInvalidParameterType	Pid %i is not a valid parameter type for statistics	2	
32	1	FaCEvErrorWritingDataset	Error writing pid %i to %s	2	
33	1	FaCEvDerivedStatsError	Error generating %s stats for %s	2	
34	1	FaCEvErrorGettingDatasetData	Error getting data from %s	4	
35	1	FaCEvNoDataForRequest	The Analysis Request %i on host %s found no data for the timespan %s to %s	2	
36	1	FaCEvNoUserStatsForTimespan	Analysis Request %i. No statistical interval expired during request time span. No statistical data generated.	2	
37	1	FaCEvSSRReplay	CDH_SET_SSR1_SCRPLY 0 %i %i %i	2	
38	1	FaCEvActivityLogDump	Activity log dump processing complete with %d new messages and %d severe message.	1	
39	1	FaCEvActivityLogSevereMsg	SCC Activity Log Severe Msg : %s.	3	
40	1	FaCEvActivityLogMsg	SCC Activity Log Msg : %s	1	
41	1	FaCEvFileWriteError	Failed to write to file: %s	3	
42	1	FaCEvReqManShowState	The current Request Manager state for %s is %s	1	
43	1	FaCEvClockFrequencyIncalculabl	Clock Correlation for stringID %d could not calculate Master Oscillator frequency values	2	
44	1	FaCEvFrequencyIncalculable	The Clock Correlation Process for stringID %d could not calculate Master Oscillator frequency values	2	
45	1	FaCEvPoorFrequencyValues	The Master Oscillator frequency values calculated by the Clock Correlation Process for stringID %d,	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			may be inaccurate		
47	1	FaCEvClockLoadSuccess	Successfully generated clock correlation load %s	1	
48	1	FaCEvClockLoadFailure	Failed to generate clock correlation load. Reason: %s	3	
49	1	FaCEvUnknownGroundMessage	The Clock Correlation process for stringID %d has received and ignored an unknown Ground Message. 12_1_FaCEvUsccsErrorValue_A USCCS clock error calculation was made for %s. The average error for the tracking service is %r microseconds, accurate to 7	3	
50	1	FaCEvProcessingSCSReport	%s processing Spacecraft Contact Session report %s	1	
51	1	FaCEvSCSReportFailed	%s failed processing Spacecraft Contact Session report %s : %s	1	
52	1	FaCEvSCSReportSuccess	%s successfully processed Spacecraft Contact Session report %s.	1	
1065	2	FcCEvNoFindParmSrv	Command transmit process could not find the parameter server, exiting	4	
1066	2	FcCEvNoFindParmSrvEndPnt	Command transmit process could not find the parameter server end point, exiting	4	
1069	2	FcCEvFailExit	Command transmit process exiting on failure	4	
2000	3	FmCEvProcessDASMsg	Schedule Controller Processing %s #%-i.	1	
2001	3	FmCEvExpandActError	Error in expanding %s #%-i	3	
2002	3	FmCEvDASSuccess	Complete SUCCESSFUL processing of %s #%-i.	1	
2003	3	FmCEvConstChkError	%s is halting processing. Error in constraint check for %s #%-i	3	
2004	3	FmCEvDelDASError1	Cannot Delete DAS #%-i, it hasn't been previously processed.	3	
2005	3	FmCEvDelDASError2	Cannot Delete DAS #%-i, load has already been uplinked	3	
2006	3	FmCEvLateChgError	Cannot process late change %i, a matching DAS has not been previously processed	3	
2007	3	FmCEvCeaseProxDAS	Ceasing processing of DAS #%-i, user terminated.	2	
2011	3	FmCEvLoadGenFailed	Load Catalog %s load generation failed for %s	3	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
2012	3	FmCEvBuildLoadErr	Error building the Load for DAS #%	2	
2013	3	FmCEvProcessGroundScript	Ground Schedule processing ground script request for string %d for %s to %s.	1	
2014	3	FmCEvProcessGSSuccess	Ground Schedule successfully created ground script for string %d for %s to %s.	1	
2015	3	FmCEvProcessGSFailed	Ground Schedule failed to create ground script for string %d for %s to %s.	2	
2016	3	FmCEvGSDeleteDAS	Ground Schedule processing delete request for %i	1	
2018	3	FmCEvGSRetnCCLst	Ground Schedule processing constraint check list request starting %s	1	
2019	3	FmCEvGSProcessUplink	Ground Schedule processing uplink schedule	1	
2020	3	FmCEvGSDirectivesSkipped	Ground Script request skipped directives between %s and %s for string %d.	2	
2021	3	FmCEvLoadFileError	Load Catalog: Load file generation error for %s	3	
2022	3	FmCEvConstraintLoad	%s Load, %s, being generated with soft constraint violations	2	
2023	3	FmCEvGenLoad	Load Catalog %s load generation started for %s	1	
2024	3	FmCEvLoadGenComplete	Load Catalog %s load generation completed for %s.	1	
2025	3	FmCEvModelDeleteFail	Unable to delete predicted model for %s.	2	
2026	3	FmCEvWarmStart	%s starting with historical data %s : %s	1	
2027	3	FmCEvColdStart	%s starting with out historical data %s : %s	1	
2028	3	FmCEvImageCompareExit	Compare of image, %s, with image, %s, finished with %d miss compares.	1	
2029	3	FmCEvImageCompareEntry	Compare of image, %s, with image, %s, starting.	1	
2030	3	FmCEvGSProcessDAS	Ground Schedule processing DAS %i version %i	1	
2031	3	FmCEvFreshStart	Memory Image Process starting with no historical data.	1	
2032	3	FmCEvReStart	Memory Image Process started using historical data.	1	
2033	3	FmCEvReproduceGS	Ground Schedule may need to be recreated from %s to %s.	3	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
2034	3	FmCEvLoadDeleteFail	Load '%s' not deleted. %s	3	
2035	3	FmCEvLoadDelete	Load, %s, deleted from catalog	1	
2036	3	FmCEvNoLoadDelete	Load, %s, previously uplinked, delete request denied	1	
2037	3	FmCEvSubmitEntryFail	Unable to submit load catalog entry for %s	2	
2038	3	FmCEvDumpNotProcessed	%s dump file not successfully processed by Memory Image server.	3	
2039	3	FmCEvReportFailed	Memory Image Server could not generate a report for %s image.	3	
2040	3	FmCEvGroundImageNotUpdated	The Ground Reference Image was not updated with load %s.	3	
2041	3	FmCEvDumpComplete	%s dump completed %s	1	FmlmMemoryImage
2043	3	FmCEvNewGroundImage	Ground Reference Image created from load %s.	1	
2045	3	FmCEvNoRTSExpansion	Expanding Activities without expanding RTCS Buffer Contents.	2	
2046	3	FmCEvDumpReadFailed	Memory Image process could not read binary from file %. Dump processing not completed.	3	
2047	3	FmCEvRTSCmdsNotFound	RTS Command mnemonics not found in Command ODF: %s, load generation failed.	3	
2048	3	FmCEvProcLoadReq	Processing Load Generation Request for %s	1	
2049	3	FmCEvProcLoadDelReq	Processing Load Delete Req for %s	1	
2050	3	FmCEvUpdateEntryFail	Load Catalog unable to update database with info: Load %s uplinked at %f.	3	
2051	3	FmCEvNotATCConstraintRequest	%s received and refused a non-ATC constraint check request.	3	
2052	3	FmCEvConstraintCheckStarting	%s constraint checking %s number %d.	1	
2053	3	FmCEvConstraintCheckSuccess	%s constraint checked %s number %d with no conflict (Success).	1	
2054	3	FmCEvConstraintCheckPending	%s constraint checked %s number %d with %d soft constraints (Pending).	2	
2055	3	FmCEvConstraintCheckFailed	%s constraint checked %s number %d with %d soft constraints and %d hard constraints (Failed).	3	
2056	3	FmCEvNoDASDelete	DAS %d not deleted from the Load Catalog.	3	
2057	3	FmCEvStatusSuccess	%s status Success : %s	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
2058	3	FmCEvStatusPending	%s status Pending : %s	2	
2059	3	FmCEvStatusFailed	%s status Failed : %s	2	
2060	3	FmCEvStatusUnknown	%s status Unknown : %s	3	
2061	3	FmCEvNullStatus	%s generated Null status.	3	
2062	3	FmCEvDeletingDAS	Load Catalog deleting ATC loads with DAS id %d.	1	
2063	3	FmCEvLoadContentsFileError	Load Catalog error opening load contents file %s.	3	
2064	3	FmCEvZeroCommandDAS	DAS #%-i contains zero ATC commands. No Load Generated.	2	
2066	3	FmCEvEmptyEvent	%s received an improperly formatted event.	3	
2067	3	FmCEvInvalidModelData	%s may contain invalid data. The process may need to be updated.	3	
2068	3	FmCEvRuleViolated	%s %s violated for %s	2	
2069	3	FmCEvCommentRule	%s	2	
2070	3	FmCEvDelLoadErr	No buffer with the load name %s found. Cannot delete.	3	
2071	3	FmCEvBufferReportFailed	ATC Buffer Report Generation Failed.	3	
2072	3	FmCEvNoGroundImage	No historical ground image available for %s in process %s.	2	
2077	3	FmCEvConstraintClientConnectio	%s constraint client failed to connect to server : %s.	4	
2078	3	FmCEvConstraintClientNoid	%s constraint client could not find command line option %s for client id.	3	
2079	3	FmCEvConstraintClientNoPortal	%s constraint client could not find command line option %s for client's server's portal number.	3	
2080	3	FmCEvConstraintClientNoHost	%s constraint client could not find command line option %s for client's server's host. Assuming client host, %s.	2	
2081	3	FmCEvServerConnectionLost	%s lost connection with server : %s.	4	
2082	3	FmCEvClientSpawnFailure	Tried to spawn %s and failed. %s	2	
2083	3	FmCEvNumLoadsDeleted	Load Catalog deleted %d loads from the database.	1	
2084	3	FmCEvUnknownRequest	Unknown service request received by %s.	2	
2085	3	FmCEvClientCommError	:%s encountered error communicating with client %s	2	
2087	3	FmCEvDBConstraintStart	Received message to begin %s database validation constraint checking.	1	
2088	3	FmCEvDBConstraintFinished	Finished processing %s database	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			validation constraint checking. Report Filename : %s		
2089	3	FmCEvDBConstraintVerChange	Received message to change database validation version to %s.	1	
2091	3	FmCEvDefConstraintFinished	Finished constraint checking %s, %s.	1	
2092	3	FmCEvDefConstraintStart	Started constraint checking %s, %s.	1	
2093	3	FmCEvNoDatabase	Could not interface with database %s on server %s.	2	
2094	3	FmCEvValidationNotify	%s informing %i Definition Constraint Check Server(s) of validation start on database version %s.	1	
2095	3	FmCEvClientError	%s: Error in request from client. %s	3	
2096	3	FmCEvESTNotCreated	Ground Schedule could not create an expected state for %t.	3	
2097	3	FmCEvBufferFileOpenError	Unable to open %s buffer file %s. Cannot save state.	3	
2099	3	FmCEvSegmentIncrement	Start Address segment incremented to %d for load '%s'.	1	
2100	3	FmCEvConfigFailure	%s error reading configuration file '%s' in directory '%s'. %s	3	
2101	3	FmCEvBufferPromoteFailed	%s failed to promote load %s to actual.	3	
2102	3	FmCEvLoadDeleteFailed	%s failed to delete load %s.	3	
2103	3	FmCEvBufferFileNotFoundException	%s failed to locate the buffer file for load %s.	3	
2104	3	FmCEvInvalidGS	Ground Script for string %d may contain invalid data from %t.	2	
2106	3	FmCEvSafeActivityFailure	Failed to expand safe activity '%s'.	3	
2109	3	FmCEvSelectFailure	%s : Error while performing select on database table '%s'.	4	
2110	3	FmCEvNoActivityExpander	%s : No Activity expander.	4	
2111	3	FmCEvLoadSizeViolation	Load initiate command %s max load size %i has been exceeded by command load %s of load size %i. Load Generation continuing.	2	
2113	3	FmCEvUnknownMnemonic	Unknown %s mnemonic '%s' in %s request.	3	
2114	3	FmCEvSubMnemonicError	Could not locate sub-mnemonic '%s' for dump command '%s' for dump '%s'.	3	
2115	3	FmCEvNoDumpFile	Could not locate dump file %s. Can not process dump.	3	
2116	3	FmCEvDumpConversionFailure	Could not convert dump file %s. %s	3	
2117	3	FmCEvDirectoryOpenFailed	%s could not open directory : %s %s	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
2118	3	FmCEvFileStatFailed	%s could not status file : %s %s	2	
2120	3	FmCEvNoLoadCatalog	Load Catalog process not found. Failure to update Load Catalog.	2	
2121	3	FmCEvDumpInvalid	Contents of dump %s SUSPECT.	3	
2122	3	FmCEvDasIdNotFound	Load Catalog failed to locate ATC loads with DAS id %d in the database.	3	
2123	3	FmCEvInvalidDBEntry	%s found %i entries in database table %s for %s '%s'. Expected %i entries.	4	
2124	3	FmCEvNoLoadFound	Load '%s' not found in Load Catalog Database. %s	3	
2125	3	FmCEvNoScheduleUpdate	Could not inform PAS of load '%s' delete. Scheduled uplinks will not be deleted.	2	
4000	5	FuCEvUnOpenFile	Unable to open %s file: %s	4	
4001	5	FuCEvFileEmpty	%s File is empty	1	
4002	5	FuCEvNoEndPoint	Unable to find %s endpoint from Nameserver	4	
4004	5	FuCEvDisconnected	%s lost proxy connection to %s	4	
4005	5	FuCEvStartRoomBuilder	Room Builder process started.	2	
4006	5	FuCEvCancelRoomBuilder	Room Builder process cancelled.	2	
4007	5	FuCEvRoomBuilderSaveTempRoom	Room saved by Room Builder.	2	
4008	5	FuCEvEndRoomBuilder	Room Builder process ended.	2	
4009	5	FuCEvProcDirSent	Sending %s to parser.	1	
4010	5	FuCEvProcedureStart	Procedure Controller Starting procedure %s	1	
4011	5	FuCEvProcedureEnd	Procedure Controller Finished processing procedure %s	1	
4012	5	FuCEvAdjustingStartTime	Time entered is earlier than current time, procedure %s will start at %s	1	
4013	5	FuCEvModeChange	Changing MODE to %s	1	
4014	5	FuCEvProcWait	Procedure %s WAITING indefinitely	1	
4015	5	FuCEvProcTimeWait	Procedure %s WAITING %s seconds	1	
4016	5	FuCEvWaitTillStartTime	Procedure %s is waiting until TIME %s to start	1	
4018	5	FuCEvProcControlWinStart	Procedure Control Window Started	1	
4019	5	FuCEvProcControlWinStop	Procedure Control Window Stopped	1	
4020	5	FuCEvFUImessage	%s	1	
4021	5	FuCEvFindFile	The file %s does %s in the %s directory.	1	
4022	5	FuCEvReplayControllerStarted	ReplayController has been started	1	
4023	5	FuCEvReplayControllerExit	Replay Controller exited	1	
4025	5	FuCEvReplayControllerLocateF	ReplayController can not locate: %s	4	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
4026	5	FuCEvCmdReqHandlerStart	Command Request Handler Started	1	
4027	5	FuCEvCmdReqHandlerStop	Command Request Handler Stopped	1	
4028	5	FuCEvCmdReqWinStart	Command Request Window Started	1	
4029	5	FuCEvCmdReqWinStop	Command Request Window Stopped	1	
4030	5	FuCEvCmdReqWinFileError	Cmd Req Win: Error opening %s	2	
4032	5	FuCEvControlWindowStartMessage	User %s logged in to %s	1	
4033	5	FuCEvNoNameServer	%s can not find NameServer	4	
4034	5	FuCEvReplayControllerFileError	ReplayController found error in file: %s	1	
4035	5	FuCEvEnvCtrlStartMessage	Environment Controller has started successfully on host %s.	1	
4036	5	FuCEvEnvCtrlFailureMessage	Environment Controller is shutting down on host %s due to signal failure.	2	
4038	5	FuCEvEnvCtrlExitMessage	Environment Controller is shutting down on host %s.	1	
4039	5	FuCEvQuickMsgInfo	From: %s To: %s Text: %s	1	
4040	5	FuCEvQuickMsgWarning	From: %s To: %s Text: %s	2	
4041	5	FuCEvQuickMsgAlarm	From: %s To: %s Text: %s	3	
4042	5	FuCEvQuickMsgFatal	From: %s To: %s Text: %s	4	
4043	5	FuCEvATCStart	ATC Buffer Display has been started	1	
4044	5	FuCEvATCExit	ATC Buffer Display exited	1	
4045	5	FuCEvATCLocateF	ATC Buffer Display can not locate: %s	1	
4046	5	FuCEvATCRestoreDataF	ATC Buffer Display can not get data from CMS	4	
4047	5	FuCEvQuickMsgStart	Quick Message Generator Started	1	
4048	5	FuCEvQuickMsgExit	Quick Message Generator exited	1	
4049	5	FuCEvBinLoadBuilderStart	Binary Load Builder Started	1	
4050	5	FuCEvBinLoadBuilderClose	Binary Load Builder Closed	1	
4051	5	FuCEvBinLdBldrCnfgFailure	Config file setup failed	4	
4052	5	FuCEvGrndScriptDisplayStart	Ground Script Display Window started	1	
4053	5	FuCEvGrndScriptDisplayExit	Ground Script Display Window exited	1	
5001	6	FpCEvProcessStarted	%s process started successfully	1	
5003	6	FpCEvProcessCompleted	%s process completed successfully	1	
5004	6	FpCEvProcessTerminated	%s process was terminated by signal %s	2	
5005	6	FpCEvLateChange	%s process: late change received; changes being applied to what-if plan %s	2	
5006	6	FpCEvJobReceived	%s process received job %s %i for time range %s to %s	1	
5007	6	FpCEvJobSent	%s process sent job type %s with ID %i to the Schedule Controller	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
5008	6	FpCEvJobStatus	%s process: job type %s with ID %i status changed to %s	1	
5009	6	FpCEvCannotConnect	%s process is unable to connect to Schedule Controller	1	
5010	6	FpCEvPlanLocked	%s process locked plan %s at %s	1	
5011	6	FpCEvResourceLocked	%s process locked resource %s at %s	1	
5015	6	FpCEvSavePlanAs	%s process: plan %s saved as plan %s	1	
5016	6	FpCEvSavePlan	%s process: saving plan %s	1	
5017	6	FpCEvPlanSaved	%s process: receiving message that plan %s has been saved	1	
5018	6	FpCEvMergePlan	%s process: merging plan %s	1	
5019	6	FpCEvOpenPlan	%s process: plan %s opened from %s to %s	1	
5020	6	FpCEvClosePlan	%s process: plan %s closed	1	
5021	6	FpCEvNewPlan	%s process: new plan %s created	1	
5022	6	FpCEvNewAccess	%s process: access created on plan %s on resource %s from %s to %s	1	
5023	6	FpCEvDelAccess	%s process: access deleted from plan %s on resource %s from %s to %s	1	
5024	6	FpCEvAllocLock	%s process: scheduled activity %s locked on plan %s from %s to %s	1	
5025	6	FpCEvAllocUnlock	%s process: scheduled activity %s unlocked on plan %s from %s to %s	1	
5026	6	FpCEvAddAnnotate	%s process: annotation added/changed for scheduled activity %s on plan %s from %s to %s	1	
5027	6	FpCEvPermAdd	%s process: permission added to plan %s for resource %s to user %s	1	
5028	6	FpCEvPermDel	%s process: permission removed from plan %s for resource %s for users %s	1	
5030	6	FpCEvBAPNew	%s process: new BAP %s created	1	
5031	6	FpCEvBAPDel	%s process: BAP %s deleted	1	
5032	6	FpCEvBAPChg	%s process: BAP %s modified	1	
5033	6	FpCEvConstrNew	%s process: new constraint %s added	1	
5034	6	FpCEvConstrDel	%s process: constraint %s deleted	1	
5035	6	FpCEvConstrChg	%s process: constraint %s changed to %s	1	
5036	6	FpCEvUnschedAllocs	%s process: request to unschedule all scheduled activities on plan %s from %s to %s on resource %s	1	
5037	6	FpCEvRemAlloc	%s process: scheduled activity %s on	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			plan %s from %s to %s unscheduled		
5038	6	FpCEvKillAlloc	%s process: unscheduled activity %s which used to be scheduled on plan %s from %s to %s deleted from system	1	
5039	6	FpCEvReAlloc	%s process: unscheduled activity %s re-scheduled on plan %s from %s to %s	1	
5040	6	FpCEvResetPlaybacks	%s process: playback activities being reset on plan %s for SSR %s from %s to %s	1	
5041	6	FpCEvSchedOverlap	%s process: activity %s not scheduled on plan %s from %s to %s because it overlaps an already scheduled activity on resource %s	2	
5042	6	FpCEvSchedModeTransOverlap	%s process: activity %s not scheduled on plan %s from %s to %s because two mode transitions would occur simultaneously on %s	2	
5043	6	FpCEvNoPermission	%s process: user %s does not have permission on resource %s from %s to %s on plan %s	2	
5044	6	FpCEvNoAccess	%s process: another user currently has access to resource %s from %s to %s on plan %s	2	
5045	6	FpCEvSchedResourceLocked	%s process: activity %s failed to be scheduled on plan %s from %s to %s because resource %s is locked	2	
5046	6	FpCEvSchedOutsideOpenPlan	%s process: activity %s failed to be scheduled on resource %s since it is outside of plan %s's open time range	2	
5047	6	FpCEvActScheduled	%s process: activity %s scheduled on resource %s on plan %s from %s to %s	1	
5048	6	FpCEvGainedAccess	%s process: user with role %s gained access to resource %s on plan %s from %s to %s	1	
5049	6	FpCEvFreedAccess	%s process: access freed from plan %s on resource %s from %s to %s	1	
5050	6	FpCEvUnschedNoPermission	%s process: activity %s failed to be unscheduled on plan %s from %s to %s since user with role %s does not have permission	2	
5051	6	FpCEvUnschedNoAccess	%s process: activity %s not unscheduled on plan %s from %s to %s because another user currently has access to resource %s	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
5052	6	FpCEvUnschedOutsideOpenPlan	%s process: activity %s failed to be unscheduled on resource %s since it is outside plan %s's open time range	2	
5053	6	FpCEvActUnscheduled	%s process: activity %s unscheduled from resource %s on plan %s from %s to %s	1	
5054	6	FpCEvUnschedResourceLocked	%s process: activity %s not unscheduled on plan %s from %s to %s because resource %s is locked	2	
5055	6	FpCEvSavePlanAsFailed	%s process: plan %s saved as plan %s failed	2	
5056	6	FpCEvSavePlanFailed	%s process: saving plan %s failed	2	
5057	6	FpCEvMergePlanFailed	%s process: merging plan %s failed	2	
5058	6	FpCEvOpenPlanFailed	%s process: opening plan %s from %s to %s failed	2	
5059	6	FpCEvClosePlanFailed	%s process: closing plan %s failed	2	
5060	6	FpCEvNewPlanFailed	%s process: creation of new plan %s failed	2	
5061	6	FpCEvAllocLockFailed	%s process: unable to lock scheduled activity %s on plan %s from %s to %s	2	
5062	6	FpCEvAllocUnlockFailed	%s process: unable to unlock scheduled activity %s on plan %s from %s to %s	2	
5063	6	FpCEvAddAnnotateFailed	%s process: unable to add/change annotation of scheduled activity %s on plan %s from %s to %s	2	
5064	6	FpCEvPermAddFailed	%s process: failed to add permission to plan %s for resource %s for users %s	2	
5065	6	FpCEvPermDelFailed	%s process: failed to remove permission from plan %s for resource %s for users %s	2	
5066	6	FpCEvPlanLockFailed	%s process failed to lock plan %s at %s	2	
5067	6	FpCEvResourceLockedFailed	%s process locked resource %s at %s	2	
5068	6	FpCEvActNew	%s process: new activity %s created	1	
5069	6	FpCEvActNewFailed	%s process: failed to create new activity	2	
5070	6	FpCEvActDel	%s process: activity %s deleted	1	
5071	6	FpCEvActDelFailed	%s process: failed to delete activity	2	
5072	6	FpCEvActChg	%s process: activity %s modified	1	
5073	6	FpCEvActChgFailed	%s process: failed to modify activity	2	
5074	6	FpCEvBAPNewFailed	%s process: failed to create new BAP	2	
5075	6	FpCEvBAPDelFailed	%s process: failed to delete BAP	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
5076	6	FpCEvBAPChgFailed	%s process: failed to modify BAP	2	
5077	6	FpCEvConstrNewFailed	%s process: failed to create new constraint	2	
5078	6	FpCEvConstrDelFailed	%s process: failed to delete constraint	2	
5079	6	FpCEvConstrChgFailed	%s process: failed to modify constraint	2	
5080	6	FpCEvRemAllocFailed	%s process: scheduled activity %s on plan %s from %s to %s unscheduled	2	
5081	6	FpCEvNoActivity	%s process: Could not find activity definition %s	2	
5082	6	FpCEvNoAllocation	%s process: Could not find the scheduled activity (allocation) %s	2	
5083	6	FpCEvNoResource	%s process: Could not find the resource %s	2	
5084	6	FpCEvNoBAP	%s process: Could not find the BAP %s	2	
5085	6	FpCEvNoConstraint	%s process: Could not find the constraint %s	2	
5086	6	FpCEvNoPlan	%s process: Could not find the plan %s	2	
5087	6	FpCEvNoState	%s process: Could not find the state	2	
5088	6	FpCEvDegrade	%s process: outage added to resource %s from %s to %s on plan %s	1	
5089	6	FpCEvDegradeFailed	%s process: failed to place an outage on resource	2	
5090	6	FpCEvPlanObjectSaved	%s process: plan %s saved to %s	1	
5091	6	FpCEvDeletePlan	%s process: plan %s deleted	1	
5092	6	FpCEvDeletePlanFailed	%s process: failed to delete plan %s	2	
5093	6	FpCEvActivitySaved	%s process: activity %s saved to %s	1	
5094	6	FpCEvActivitySaveFailed	%s process: failed to save activity %s to %s	2	
5095	6	FpCEvActivityRemoved	%s process: activity %s removed from %s	1	
5096	6	FpCEvActivityRemoveFailed	%s process: failed to remove activity %s from %s	2	
5097	6	FpCEvBAPSaved	%s process: BAP %s saved to %s	1	
5098	6	FpCEvBAPSaveFailed	%s process: BAP %s failed to be saved to %s	2	
5099	6	FpCEvBAPRemoved	%s process: BAP %s removed from %s	1	
5100	6	FpCEvBAPRemoveFailed	%s process: failed to remove BAP %s from %s	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
5101	6	FpCEvConstraintSaved	%s process: constraint %s saved to %s	1	
5102	6	FpCEvConstraintSaveFailed	%s process: failed to save constraint %s to %s	2	
5103	6	FpCEvConstraintRemoved	%s process: constraint %s removed from %s	1	
5104	6	FpCEvConstraintRemoveFailed	%s process: failed to remove constraint %s from %s	2	
5105	6	FpCEvPermissionSaved	%s process: permission saved to %s	1	
5106	6	FpCEvPermissionSaveFailed	%s process: failed to save permission to %s	2	
5107	6	FpCEvLockTimeSaved	%s process: lock time saved to %s	1	
5108	6	FpCEvLockTimeSaveFailed	%s process: failed to save lock time to %s	2	
5109	6	FpCEvAccessSaved	%s process: access saved to %s	1	
5110	6	FpCEvAccessSavedToDbFailed	%s process: failed to save access to database	2	
5111	6	FpCEvAccessRemFromDb	%s process: access removed from database	1	
5112	6	FpCEvAccessRemFromDbFailed	%s process: failed to remove access from database	2	
5113	6	FpCEvRsLockTimeSaveFailed	%s process: failed to save resource lock time to %s	2	
5114	6	FpCEvRsLockTimeSaved	%s process: resource lock time saved to %s	1	
5115	6	FpCEvPlanObjectSaveFailed	%s process: failed to save plan %s to %s	2	
5116	6	FpCEvPlanRemoved	%s process: plan %s removed from %s	2	
5117	6	FpCEvPlanRemoveFailed	%s process: failed to remove plan %s from %s	2	
5118	6	FpCEvLoadAccessesFailed	%s process: failed to load accesses from %s	2	
5119	6	FpCEvLoadAllocsFailed	%s process: failed to load scheduled activities (allocations) from %s	2	
5120	6	FpCEvLoadStatesFailed	%s process: failed to load states from %s	2	
5121	6	FpCEvLoadActPoolFailed	%s process: failed to load activity pool from %s	2	
5122	6	FpCEvLoadBAPPoolFailed	%s process: failed to load BAP pool from %s	2	
5123	6	FpCEvLoadCommandsFailed	%s process: failed to load commands from %s	2	
5124	6	FpCEvLoadConstrPoolFailed	%s process: failed to load constraint pool from %s	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
5125	6	FpCEvLoadEventsFailed	%s process: failed to load events from %s	2	
5126	6	FpCEvLoadEventTypesFailed	%s process: failed to load event types from %s	2	
5127	6	FpCEvLoadHelpCtxtFailed	%s process: failed to load help context from %s	2	
5128	6	FpCEvLoadModesFailed	%s process: failed to load modes from %s	2	
5129	6	FpCEvLoadMsgTypesFailed	%s process: failed to load message types from %s	2	
5130	6	FpCEvLoadPlanPoolFailed	%s process: failed to load plan pool from %s	2	
5131	6	FpCEvLoadProceduresFailed	%s process: failed to load procedures from %s	2	
5132	6	FpCEvLoadRoleFailed	%s process: failed to load roles from %s	2	
5133	6	FpCEvLoadRsPoolFailed	%s process: failed to load resource pool from %s	2	
5134	6	FpCEvLoadRsAssocFailed	%s process: failed to load resource associations from %s	2	
5135	6	FpCEvLoadSchRsPoolFailed	%s process: failed to load scheduling resource pool from %s	2	
5136	6	FpCEvLoadSchRsAssocFailed	%s process: failed to load scheduling resource associations from %s	2	
5137	6	FpCEvRemoveAccessesFailed	%s process: failed to remove accesses from %s	2	
5138	6	FpCEvSaveActPoolFailed	%s process: failed to save activity pool into %s	2	
5139	6	FpCEvSaveAllocsFailed	%s process: failed to save scheduled activities (allocations) into %s	2	
5140	6	FpCEvRemoveAllocsFailed	%s process: failed to remove scheduled activities (allocations) for deleted plan %s from %s	2	
5141	6	FpCEvSaveBAPPoolFailed	%s process: failed to save BAP pool into %s	2	
5142	6	FpCEvSaveConstrPoolFailed	%s process: failed to save constraint pool into %s	2	
5143	6	FpCEvSaveCommandsFailed	%s process: failed to save commands into %s	2	
5144	6	FpCEvSaveEventsFailed	%s process: failed to save events into %s	2	
5145	6	FpCEvSaveEventTypesFailed	%s process: failed to save event types into %s	2	
5146	6	FpCEvSaveHelpCtxtFailed	%s process: failed to save help context into %s	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
5147	6	FpCEvSaveModesFailed	%s process: failed to save modes into %s	2	
5148	6	FpCEvSaveMsgTypesFailed	%s process: failed to save message types into %s	2	
5149	6	FpCEvSavePlanPoolFailed	%s process: failed to save plan pool into %s	2	
5150	6	FpCEvSaveProceduresFailed	%s process: failed to save procedures into %s	2	
5151	6	FpCEvSaveRoleFailed	%s process: failed to save roles into %s	2	
5152	6	FpCEvSaveRsPoolFailed	%s process: failed to save resource pool into %s	2	
5153	6	FpCEvSaveRsAssocFailed	%s process: failed to save resource associations into %s	2	
5154	6	FpCEvSaveSchRsPoolFailed	%s process: failed to save scheduling resource pool into %s	2	
5155	6	FpCEvSaveSchRsAssocFailed	%s process: failed to save scheduling resource associations into %s	2	
5156	6	FpCEvLoadMsgTypeFailed	%s process: failed to load message type %s from %s	2	
5157	6	FpCEvSavePlanLockFailed	%s process: failed to lock plan pool using %s	2	
5158	6	FpCEvGetPlanLockFailed	%s process: failed to get whether plan pool is locked using %s	2	
5159	6	FpCEvSaveStatesFailed	%s process: failed to save states into %s	2	
5160	6	FpCEvRemoveStatesFailed	%s process: failed to remove states for deleted plan %s from %s	2	
5161	6	FpCEvCantConnectToNs	%s process is unable to connect to name server	2	
5162	6	FpCEvCantRegisterWithNs	%s process is unable to register with the name server	2	
5163	6	FpCEvProcessAborted	%s process aborted	2	
5164	6	FpCEvCantCreateEndPoint	%s process unable to create end point	2	
5165	6	FpCEvUnknownRWMsg	%s process: unknown Rogue Wave message	2	
5166	6	FpCEvNoSResource	%s process: Could not find the schedulable resource %s	2	
5167	6	FpCEvNotInheritedFrom	%s process: %s not inherited from %s	2	
5168	6	FpCEvNotSpecified	%s process: %s not specified or null	2	
5169	6	FpCEvNoEvent	%s process: Could not find the event	2	
5170	6	FpCEvUnschedActivityLocked	%s process: activity %s not unscheduled on plan %s from %s to %s because activity is locked	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
7002	8	FrCEvSnotRItorSim	String %d is not Realtime or Simulation String. Resubmit directive with a Realtime or Simulation String.	1	
7003	8	FrCEvInvalid	DEBUG: %s %s is invalid.	2	
7004	8	FrCEvCmdAuth	User %s and Wks %s already has Command Authority on string %d	1	
7006	8	FrCEvNoResp	No response received from the RTS String Manager on the %s Request.	2	
7007	8	FrCEvFailedReqSt	Failed Request Status received from RTS String Manager on the %s request.	2	
7008	8	FoCEvNold	%s not specified within %s	4	FUI
7010	8	FrCEvNoProc	Failed to process a %s Request. No default string was created.	2	
7011	8	FrCEvNoFP	DEBUG: Unable to find a WsRmsRequestProxy for the RTS String Manager on RTSID: %d.	4	
7012	8	FrCEvInvalidPrID	DEBUG: WsRmsRequestProxy has an invalid RTSID of %d instead of %d.	4	
7013	8	FrCEvUnSReq	Unable to send %s Request Response for a %s Request to %s.	2	
7014	8	FrCEvCmdNum	DEBUG: Illegal number of command line arguments.	4	
7015	8	FrCEvErrCaught	RMS has encountered a %s error. The reason for the error is %s.	2	
7016	8	FrCEvNoLink	DEBUG: RMS has no link with Controller.	2	
7018	8	FrCEvNoFork	Unable to create a %s.	2	
7020	8	FrCEvUnSucc	Unsuccessful creation of %s process. User should be sure that %s environment variable is being properly set.	2	
7022	8	FrCEvUnable	DEBUG: Unable to find %s in %s list.	2	
7024	8	FrCEvNoFSorBS	Could not find active string %d or it's backup string	2	
7025	8	FrCEvNoS	Unable to locate string %d. User should make sure directive contains the correct string ID.	1	
7026	8	FoCEvUnOpenFile	Unable to open %s file	4	FUI
7027	8	FoCEvFileEmpty	%s File is empty	4	FUI
7029	8	FrCEvStCreate	User unsuccessfully created a %s string.	1	
7030	8	FrCEvInvReqParam	%s Request contains invalid %s	2	
7033	8	FrCEvNoStIDs	Unable to create string due to no available string IDs. User should	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			delete any unnecessary strings.		
7036	8	FrCEvReconf	Reconfiguration of %s was %s. If unsuccessful, consult User's Guide for appropriate action.	2	
7038	8	FrCEvDedStConn	Invalid Request: Connection to a Dedicated Replay String is provided automatically.	1	
7039	8	FrCEvWrConn	%s only be connected as %s	1	
7041	8	FrCEvNoAll	User cannot request state check, All, or Default Telemetry	1	
7046	8	FrCEvNoAddList	DEBUG: %s to add %s %s to the %s List.	2	
7047	8	FrCEvUserWsPriv	Both User %s and Workstation %s must be authorized for %s privilege	1	
7048	8	FrCEvExit	String Manager is exiting %s. All strings will be deleted.	4	
7049	8	FrCEvSidLstIns	DEBUG: Unable to insert FUI updates into the set of FUI updates.	2	
7050	8	FrCEvNmSv	%s performed nameserver %s on %s Endpoint	4	
7051	8	FrCEvBadEp	DEBUG: Nameserver returned wrong endpoint for %s process.	1	
7053	8	FrCEvPrConf	%s process %s configured	1	
7054	8	FrCEvInvProx	DEBUG: Unrecognized process name for the %s process.	2	
7055	8	FrCEvFuiUpd	Unable to update FUI with String Info. Suggest restarting this Userstation.	2	
7057	8	FrCEvReplyEvent	DEBUG: %s reply received by %s. Request response is A is %d.	2	
7058	8	FrCEvReceivedData	DEBUG: RMS received data rather than an object.	2	
7059	8	FrCEvInvConn	User cannot connect when already connected.	1	
7060	8	FrCEvClnUpFailed	RMS was not able to perform cleanup duties. User may need to manually delete processes and cleanup nameserver.	4	
7061	8	FrCEvSCreated	String %d was %s.	1	
7062	8	FrCEvInvalEnv	Invalid Environment variable. Be sure that all environment variables are being set properly at system startup.	2	
7066	8	FrCEvSetCmdAuth	Cannot set Command authority with user %s and workstation %s.	2	
7068	8	FrCEvNoSw	No %s exists for String ID %d	2	
7070	8	FrCEvUnrecReconfig	Unrecognized %s Reconfiguration	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			Directive for String %d.		
7072	8	FrCEvNoConfigChg	No config change was made because the process that the config change applies to does not exist on this host.	2	
7077	8	FrCEvGcAuth	User %s and Wks %s already has Ground Control Authority on string %d	1	
7079	8	FrCEvChangeGcAuth	Ground Control Authority has changed from %s to %s	1	
7080	8	FrCEvNoMirr	Must be connected as Mirrored before requesting %s Authority.	1	
7081	8	FrCEvStReconfig	%s reconfigured string processes	1	
7083	8	FrCEvNotGc	User is not the Ground Controller for string %d. User must have Ground Control Authority before requesting this service.	1	
7084	8	FrCEvStop	%s terminated %s Process ID %d.	2	
7085	8	FrCEvStExists	User trying to create a %s string that already exists.	1	
7086	8	FrCEvNoPid	The Ground Parameter %s does not have an associated Parameter ID. Generate a new PID ODF with the proper PIDs.	2	
7087	8	FrCEvInvalPriv	User %s must have the %s Privilege before %s.	1	
7088	8	FrCEvChangeAuth	Command Authority has changed from %s to %s.	1	
7089	8	FrCEvSnotRltSimorRp	String %d is not Realtime, Simulation, or Shared Replay. Resubmit directive with a Realtime, Sim, or Shared Replay String ID.	1	
7090	8	FrCEvInvalidHost	DEBUG: FrGrController has an invalid host of %s.	2	
7091	8	FrCEvInvalidGc	User cannot reconfigure local mirrored processes without Ground Control Authority.	1	
7092	8	FrCEvNoMcast	Unable to retrieve a Multicast Address. Make sure that a mcast address for RMS is within the appropriate config file.	4	
7093	8	FrCEvUnknownString	String type of %d is unknown.	2	
7094	8	FrCEvStillSearch	DEBUG: Still searching for the endpoint for %s.	1	
7095	8	FrCEvTimeOut	Timed out waiting for %s service to configure.	2	
7096	8	FrCEvStrConn	%s connected to String %d.	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
7097	8	FrCEvNoDb	%s Database Id is not available.	1	
7098	8	FrCEvDeleteString	DEBUG: %s string %d from string table.	1	
7099	8	FrCEvUsersConn	Unable to delete String %d when users are connected. Suggest notifying users to disconnect from String.	1	
7100	8	FrCEvStrDisconnect	User %s disconnected from String %d.	1	
7101	8	FrCEvStillStop	Shutting down %s process.	1	
7103	8	FrCEvSnotOp	Realtime String %d is not an Operational String and cannot be backed up.	1	
7104	8	FrCEvSnotRT	String %d is not a Realtime String and cannot be backed up or failed over.	1	
7106	8	FrCEvIncommRts	Unable to Deactivate String %d due to a broken communication link with the RTS.	2	
7107	8	FrCEvNoUpdate	Unable to update the RMS String Table on RTS %d. Suggest restarting RTS %d.	2	
7109	8	FrCEvChangeState	Unable to change state of %s process to %s.	2	
7110	8	FrCEvNoBackup	%s processing does not exist for String %d.	1	
7111	8	FrCEvDeleteBackup	User must delete backup processing before deleting the active processing.	1	
7112	8	FrCEvActRts	Unable to create Backup String on RTS %d because active string processing exists on this RTS.	1	
7113	8	FrCEvEstServ	Establishing %s service...	1	
7114	8	FrCEvNoSysName	Unable to determine a system name for this device. Check with Sys Administrator to be sure device is configured properly	2	
7115	8	FrCEvNoRole	Unable to determine a role for this device. Check RMS Config file to determine if this device is listed.	4	
7116	8	FrCEvNoWsUpdate	Unable to update Userstation String Tables. Suggest restarting Userstations.	2	
7117	8	FrCEvNoRtsTable	Unable to retrieve RTS RMS Configuration Information.	4	
7118	8	FrCEvSwitchRole	%s switching to %s for string %d.	1	
7119	8	FrCEvNoMonitor	%s to %s monitoring the Realtime	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			String %s.		
7120	8	FrCEvStopRole	%s stopping %s for string %d.	1	
7121	8	FrCEvStartRole	%s starting %s for string %d.	1	
7122	8	FrCEvStopMonitorString	Stopping monitoring for string %d.	1	
7123	8	FrCEvActiveSoftwareFailure	Active strand for string %d failed due to failure of %s process. Suggest failover.	3	
7124	8	FrCEvRTSFailed	Realtime server %d, host name %s, failed.	3	
7125	8	FrCEvComplementUnavailable	Complement for local string %d unavailable. %s string assigned to failed RTS %d.	3	
7126	8	FrCEvUserStationUnavailable	String %d %s user station, host name %s, unavailable.	3	
7127	8	FrCEvMonitorUSRequestFailed	%s user station monitor request failed for string %d.	3	
7128	8	FrCEvMonitorSWRequestFailed	Software monitor request failed for string %d. Suggest string deletion.	3	
7129	8	FrCEvUserStationAvailable	String %d %s user station, host name %s, available.	1	
7130	8	FrCEvRTSAvailable	Realtime server %d, host name %s, available.	1	
7131	8	FrCEvProcessingExists	User cannot create backup processing until %s processing is deleted.	1	
7132	8	FrCEvBackupSoftwareFailure	Backup strand for string %d failed due to failure of %s process. Suggest string delete BACKUP state.	3	
7133	8	FrCEvStllegal	User illegally trying to create a %s string. Suggest making sure that string's mode is valid.	1	
7134	8	FrCEvModelIllegal	User trying to create a %s string with an invalid mode.	1	
7135	8	FrCEvInvalidDbFile	RMS Configuration File missing the %s section. Suggest creating a new Configuration File with a %s section.	1	
7136	8	FrCEvUnStart	Unable to start %s process for String %d.	1	
8001	9	FoCEvProcessStarting	%s starting.	1	
8002	9	FoCEvProcessTerminating	%s terminating.	1	
8004	9	FoCEvRWxmsg	%s %s	4	
8005	9	FoCEvProcessFailInit	%s process failed initialization	4	
8006	9	FoCEvProcessFailing	%s terminating with critical failure.	4	
8007	9	FoCEvEnvVarFailure	%s can not read environment variable : %s.	4	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
8008	9	FoCEvODFFailure	%s can not read Operational Data File (ODF) %s.	4	
8009	9	FoCEvNSLookupFail	%s Could not locate %s	2	
8010	9	FoCEvAttemptReconnect	%s attempting to reconnect to %s	1	
8011	9	FoCEvReconnectSuccess	%s successfully reconnected to %s	1	
8012	9	FoCEvReconnectFailed	%s failed to reconnect to %s	2	
8040	9	FoCEvResponseFailed	%s failed to send response back to calling process.	2	
8041	9	FoCEvFileNotFoundException	%s process cannot read file %s.	2	
8042	9	FoCEvLoadEntryNotFound	Load Catalog Entry for %s not found	3	
8043	9	FoCEvConnectionErr	%s unable to connect to %s	3	
8044	9	FoCEvFileReadError	%s failed to read from file %s	3	
8049	9	FoCEvIncompleteEnvironment	%S could not find value for %s in configuration information.	3	
8050	9	FoCEvConfigLookupFailed	%s failed lookup of configuration information for %s.	2	
8051	9	FoCEvTIVhostdown	Host %s reports that host %s does not respond	3	
8052	9	FoCEvTIVloadavg	Host %s has more than %s ready (waiting) jobs	2	
8053	9	FoCEvTIVpageouts	The number of pages written out by the memory manager on host %s has increased more than %s	2	
8054	9	FoCEvTIVmailqlen	Host %s has more than %s entries in its outgoing mail queue	2	
8055	9	FoCEvTIVulogins	Host %s reports that user %s has more than %s logins	2	
8056	9	FoCEvTIVulogintot	Host %s has more than %s users logged in	2	
8057	9	FoCEvTIVzombies	Host %s has more than %s zombie processes	2	
8058	9	FoCEvTIVswapavail	Host %s has less than %s swap space available	3	
8059	9	FoCEvTIVfilechk	Host %s has detected a checksum change for file %s, indicating that the file has been changed	3	
8060	9	FoCEvTIVfileperm	Host %s has detected a change in the file permissions on %s from %s	3	
8061	9	FoCEvTIVfilesize	Host %s reports that file %s is larger than %s	2	
8062	9	FoCEvTIVtivdbspace	Host %s reports that the Tivoli database has less than %s of disk space available	2	
8063	9	FoCEvTIVdiskavail	Host %s reports that filesystem %s	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			has less than %s of free space		
8064	9	FoCEvTIVdiskused	Host %s reports that filesystem %s has more than %s space in use	2	
8065	9	FoCEvTIVdiskusedpct	Host %s reports that filesystem %s has more than %s space in use	2	
8066	9	FoCEvTIVinodes	Host %s reports that filesystem %s has fewer than %s inodes available	2	
8067	9	FoCEvTIVinodesused	Host %s reports that filesystem %s has more than %s inodes in use	2	
8068	9	FoCEvTIVinodesusedpct	Host %s reports that filesystem %s has more than %s inodes in use	2	
8069	9	FoCEvTIVbadnfs	Host %s reports that the number of NFS bad calls has increased more than %s	2	
8070	9	FoCEvTIVnetouterr	Host %s reports that the number of TCP/IP output packet errors has increased more than %s	2	
8071	9	FoCEvTIVnetcollpct	Host %s reports that the ratio of network collisions per output packet is more than %s	2	
8072	9	FoCEvTIVnetcoll	Host %s reports the number of TCP/IP network collisions has increased more than %s	2	
8073	9	FoCEvTIVbadrpc	Host %s reports the number of rejected RPC request has increased more than %s	2	
8074	9	FoCEvTIVrpctmout	Host %s reports the number of RPC timeouts has increased more than %s	2	
8075	9	FoCEvTIVnetin	Host %s reports that the number of TCP/IP packets has increased more than %s	2	
8076	9	FoCEvTIVnetinerr	Host %s reports that the number of TCP/IP input packet errors has increased more than %s	2	
8077	9	FoCEvTIVprintjobs	Host %s reports that the print queue %s has more than %s jobs	2	
8078	9	FoCEvTIVprintjobsize	Host %s reports that the total size of jobs queued on printer queue %s is more than %s	2	
8079	9	FoCEvTIVprintstat	Host %s reports that print queue %s has become unavailable	3	
8080	9	FoCEvTIVProcessDead	Host %s reports that process %s has died	3	
8081	9	FoCEvTIVdaemon	Host %s reports that daemon %s has died	3	
8082	9	FoCEvTIVdaemonct	Host %s reports that daemon %s has	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
			more than %s copies running		
8083	9	FoCEvRcvdUnknownMsg	Received unknown message, message id %d	2	
8084	9	FoCEvUnknownTivMonitor	Tivoli gateway received event for unknown monitor; monitor=%s, resource=%s, trigger=%s, host=%s	3	
8085	9	FoCEvTIVnetout	Host %s reports that the number of TCP/IP transmitted packets has increased more than %s	2	
8086	9	FoCEvFileMetaStoreFailure	%s failure storing file %s with file-meta. %s	2	
8087	9	FoCEvFileMetaRetrieveFailure	%s failure retrieving file %s with file-meta. %s	2	
8088	9	FoCEvTIVoservdown	Host %s reports that the Tivoli oserv daemon on %s is down	2	
8089	9	FoCEvTIVoservup	Host %s reports that the Tivoli oserv daemon on %s is now up	1	
8090	9	FoCEvTIVhostup	Host %s reports that host %s is now available	1	
8091	9	FoCEvFileRemoveFailure	Error removing file %s. %s	2	
8092	9	FoCEvTIVCPUUtilization	Host %s reports that CPU utilization is above %s	1	
9000	10	FtCEvBadCcsdsVersion	%s: Unable to decom packet; received CCSDS version %d does not match expected CCSDS verison %d.	1	
9001	10	FtCEvUnexpectedPacketApid	%s: Unable to decom packet; received APID %d does not match expected APID %d.	1	
9002	10	FtCEvUnexpectedPacketLength	%s: Unable to decom packet; received length %d does not match expected length %d.	1	
9003	10	FtCEvPacketSequenceError	%s: CCSDS packet sequence error, %d packet(s) missing between %d and %d.	1	
9004	10	FtCEvConversionBoundsError	A bounds error occured determining the conversion set.	1	
9005	10	FtCEvConversionGroupError	Conversion group error	1	
9006	10	FtCEvInvalidConversionId	Invalid Conversion ID	1	
9007	10	FtCEvPacketFillData	%s: Packet received contains all fill data.	1	
9008	10	FtCEvPacketRSVerifyError	%s: Packet failed Reed-Solomon verification.	1	
9009	10	FtCEvCoefficientCount	%s: Polynomial conversion has at most %d coefficients.	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
9010	10	FtCEvCantReadMapConfigFile	%s: Unable to read packet map configuration file %s; cannot seek to beginning.	3	
9011	10	FtCEvCantReadStateFile	%s: Unable to read packet map file %s; file is empty.	3	
9012	10	FtCEvCantWriteMapConfigFile	%s: Unable to write packet map configuration file %s; cannot seek to beginning.	3	
9013	10	FtCEvNoPacketMapsFound	%s: Unable to decom packet; no packet maps found.	3	
9014	10	FtCEvHandleSendError	Handle Send Error.	3	
9018	10	FtCEvMemoryError	%s: Could not allocate memory for packet buffer.	3	
9019	10	FtCEvCantGetData	%s: Unable to extract data for %s; target buffer size is 0.	3	
9020	10	FtCEvDataBoundsError	%s: Unable to extract data for %s; offset %d, length %d exceed packet buffer size of %d.	3	
9021	10	FtCEvCantInitAnalog	Analog Parameter init failed	2	
9022	10	FtCEvCantInitDiscrete	Discrete Parameter init failed	2	
9023	10	FtCEvDataTimeout	%s: Timeout receiving data, timeout is %d seconds.	3	
9024	10	FtCEvCommError	%s: Communication error during %s.	3	
9025	10	FtCEvExitOk	%s: Exiting normally.	1	
9026	10	FtCEvTaskMemoryWarning	%s: Out of memory during %s.	3	
9027	10	FtCEvFatalError	%s: Terminating due to fatal error.	4	
9028	10	FtCEvInvalidArgumentException	%s: Received invalid command line argument: %s.	3	
9029	10	FtCEvInvalidArgumentNumber	%s: Received invalid number of command line arguments: %d.	3	
9030	10	FtCEvInvalidPid	%s: Pid %d does not exist.	2	
9031	10	FtCEvRWExternalError	%s: Detected an RW External error during %s.	3	
9032	10	FtCEvRWInternalError	%s: Detected an RW Internal error during %s.	3	
9033	10	FtCEvRWXmsgError	%s: Detected an RW Xmsg error during %s.	3	
9034	10	FtCEvReceiveDataError	Error Receiving Data.	3	
9035	10	FtCEvUnidentifiedInitError	%s: Detected an unknown error during %s.	3	
9036	10	FtCEvUnidentifiedRunError	%s: Detected an unknown error during execution.	3	
9037	10	FtCEvFileOpenErr	System open error on fosconfig file	1	
9038	10	FtCEvInvalidSwitch	Invalid Switch type.	1	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
9039	10	FtCEvRedLimitViolation	%s: %s Red %s limit violation: %s (lo: %s, hi: %s).	2	
9040	10	FtCEvYellowLimitViolation	%s: %s Yellow %s limit violation: %s (lo: %s, hi: %s).	2	
9041	10	FtCEvBackInLimits	%s: %s has returned from %s limit violation: %s (lo: %s, hi: %s).	1	
9042	10	FtCEvDeltaLimitViolation	%s: %s Delta limit violation at %t: %s (delta: %s).	2	
9043	10	FtCEvDecomIsReady	%s: Ready to receive telemetry packets.	1	
9044	10	FtCEvDumpStart	%s: Memory dump file %s created, word count is %d.	1	
9045	10	FtCEvDumpComplete	%s: Memory dump file %s is complete, %d words expected, %d words dumped.	1	
9046	10	FtCEvDumpTimeout	%s: Memory dump data timeout: %d words were dumped in dump file %s.	2	
9047	10	FtCEvDumpAborted	%s: Memory dump aborted; deleting file %s, %d words were dumped.	2	
9048	10	FtCEvDumplIsReady	%s: Ready to receive diagnostic packets.	1	
9049	10	FtCEvUnexpectedRtAddress	%s: Received unexpected RT Address. RT Address %d was expected, RT Address %d was received.	2	
9050	10	FtCEvFileMetaNotStored	%s: %s was not stored sucessfully by the File MetaServer.	2	
9051	10	FtCEvRedAlarmLimitViolation	%s: %s Red %s limit violation: %s (lo: %s, hi: %s).	3	
9052	10	FtCEvConfigRequestFail	%s: %s configuration request failed.	2	
9053	10	FtCEvCantSendTaskResponse	%s: Unable to send a request status to client.	2	
9054	10	FtCEvErrCaught	%s: Configuration %s error encountered; reason is %s.	2	
9055	10	FtCEvDumpDirectiveFail	%s: %s directive failed.	2	
9056	10	FtCEvInvalidDumpData	%s: Valid packet data indicator is false; data packet is zero filled.	1	
9057	10	FtCEvCantGetHeaderData	%s: Unable to extract header data; target buffer size is 0.	3	
9058	10	FtCEvHeaderDataBoundsError	%s: Unable to extract header data; offset %d, lenghth %d exceed packet buffer size of %d.	3	
9059	10	FtCEvDiscreteMiscompare	%s: Miscompare on PID %d: Expected value = %s, Actual value = %s.	2	

**Table B-1. Event Message Definitions (continued)**

ID	Type	Name	Background	Trigger	Process
9060	10	FtCEvIntMiscompare	%s: Miscompare on PID %d: Expected range = %d to %d, Actual value = %d.	2	
9061	10	FtCEvRealMiscompare	%s: Miscompare on PID %d: Expected range = %f to %f, Actual value = %f.	2	
9062	10	FtCEvStateCheckComplete	%s: Completed with %d successes and %d miscompares.	1	
9066	10	FtCEvStChkDataNotAvailable	%s: Could not state check %s, data is not available.	2	
9067	10	FtCEvStChkDataBadQuality	%s: Could not state check %s, data quality is bad.	2	
9068	10	FtCEvDumpFileNotOpen	%s: Unable to open dump file %s for writing.	2	
9069	10	FtCEvFileMetaStored	%s: Successfully stored dump file %s in the File Meta Server.	1	
9070	10	FtCEvStateCheckIsReady	%s State Check: Ready to receive directives.	1	
9071	10	FtCEvCantFetchTable	%s: Communication error occurred while trying to retrieve an expected state table from CMS.	3	
9072	10	FtCEvInvalidEnvVar	%s: The environment variable for %s is invalid.	3	
9073	10	FtCEvUnableToNotifyCms	Unable to successfully notify CMS of completed dump	2	
9074	10	FtCEvChangeState	%s: Changing state from %s to %s.	1	
9075	10	FtCEvPackGenIsReady	%s: Ready to receive directives.	1	
9076	10	FtCEvDumpNotificationRcvd	Received notification of impending Memory Dump	1	

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## Appendix C. FOS Ground Parameters

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***Table C-1. Packet Types (1 of 2)***

I/F	Type	Header Mnemonic	Message Type	Length
1	1	EDS_HD_EDOS_HEADER	0	32
2	2	GcmrUserReacqMsg	1	32
2	3	GcmrFwdLinkSweepReqMsg	2	31
2	4	GcmrFwdLinkEIRPReconfigMsg	3	32
2	5	GcmrExpandUserFreqMsg	4	31
2	6	GcmrMaFwdLinkReconfigMsg	5	53
2	7	GcmrSsaFwdLinkReconfigMsg	6	70
2	8	GcmrKsaFwdLinkReconfigMsg	7	75
2	9	GcmrMaRtnLinkReconfigMsg	8	86
2	10	GcmrSsaRtnLinkReconfigMsg	9	112
2	11	GcmrKsaRtnLinkReconfigMsg	10	149
2	12	GcmrDopplerCompInhibitMsg	11	32
2	13	GcmrDispositionMsg	12	41
2	14	GcmrStatusMsg	13	34
2	15	GcmrCommTestMsg	14	18
3	16	GCM_ER_CODES	0	0
4	17	CDA_GrndMsgHdrBlk	1	24
4	18	FgCEiContentIndicatorBlk	2	47
4	19	FgCEiRtnLkPhyChanBlk	3	93
4	20	FgCEiFwdLkStatusBlk	4	60
4	21	FgCEiCcsdsVcdtStatusBlk	5	38
6	22	UpdTimeTransferMsgClass	1	45
7	23	UpdCommTestMsg	2	18
6	24	UpdRtnChTimeDelayMsg	3	126
8	25	UpdRequestMsg	4	27
6	26	UpdAcqFailureMsgClass	5	24
5	27	UpdNccUpdMsgHdr	6	22
5	28	UpdSaServiceHdr	7	100
5	29	UpdMaServiceHdr	8	100
5	30	UpdSimServiceHdr	9	100
5	31	UpdSsaFwdServicePckt	10	100
5	32	UpdKsaFwdServicePckt	11	100

**Table C-1. Packet Types (2 of 2)**

I/F	Type	Header Mnemonic	Message Type	Length
5	33	UpdSsaDg1Return	12	100
5	34	UpdSsaDg2Return	13	100
5	35	UpdSsaDataQuality	14	100
5	36	UpdKsaDg1Return	15	100
5	37	UpdKsaDg2Return	16	100
5	38	UpdKsaDataQuality	17	100
5	39	UpdMaForward	18	100
5	40	UpdMaReturn	19	100
5	41	UpdMaDataQuality	20	100
5	42	UpdSimForward	21	100
5	43	UpdSimReturn	22	100

**Table C-2. Packet Definitions (1 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
1	EDS_ARCHIVE_FLAG	3	0	0	1	1	
1	EDS_CCSDS_HDR_LENGTH	34	0	0	48	1	
1	EDS_CHANNEL_I	36	0	0	0	1	
1	EDS_CHANNEL_Q	37	0	0	0	1	
1	EDS_CRC_FAILURE	15	76	1	0	1	
1	EDS_CYCLE_COUNT	31	0	0	0	1	
1	EDS_ESH_LENGTH	7	0	0	160	1	
1	EDS_ESH_VERSION	8	0	4	0	1	
1	EDS_EXPECT_VERSION	5	0	0	0	1	
1	EDS_FILLDATA	24	79	1	0	1	
1	EDS_FILL_LOC	23	96	16	0	1	
1	EDS_GRT	25	8	56	0	1	
1	EDS_HEADER_FLAG	2	0	0	1	1	
1	EDS_LISTEN_PORT	4	0	0	0	1	
1	EDS_PCKT_LENGTH_ERR	30	78	1	0	1	
1	EDS_QUALITY	6	144	1	0	1	
1	EDS_RECOVER_ID	13	74	1	0	1	
1	EDS_RT_ADDRESS	40	280	8	0	1	
1	EDS_SCID	17	82	8	0	1	
1	EDS_SDU_TYPE	9	4	4	0	1	
1	EDS_SEC_HDR_LENGTH	35	0	0	72	1	

**Table C-2. Packet Definitions (2 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
1	EDS_SEQ_DISCONT	11	72	1	0	1	
1	EDS_SEQ_FLAG	38	16	14	0	1	
1	EDS_SSC_DISCONT	16	77	1	0	1	
1	EDS_TDRSS_PORT	10	64	8	0	1	
1	EDS_TEST_DATA	14	75	1	0	1	
1	EDS_TIMEOUT	1	0	0	5	1	
1	EDS_VALID_DATA_16K	42	13471	1	0	1	
1	EDS_VALID_DATA_1K	43	1823	1	0	1	
1	EDS_VCDU_ERR	19	150	10	0	1	
1	EDS_VCDU_HDR	20	145	5	0	1	
1	EDS_VCDU_PLAYBACK	12	73	1	0	1	
1	EDS_VCID	18	90	6	0	1	
1	EDS_WORD_COUNT	41	288	16	0	1	
1	SDU_CCSDS_VER	21	0	3	0	1	
1	SDU_PACKET_SEQ	26	18	14	0	1	
1	SDU_PACKET_TYPE	39	3	1	0	1	
1	SDU_PCKT_APID	28	5	11	0	1	
1	SDU_PCKT_LENGTH	29	32	16	0	1	
1	SDU_PCKT_QUICK_LOOK	32	112	1	0	1	
1	SDU_PCKT_USER_FLAG	33	113	7	0	1	
1	SDU_SCTIME	27	48	64	0	1	
1	SDU_SEC_HEADER	22	4	1	0	1	
2	GCM_UR_LINK	8	29	2	00	1	LINK
2	GCM_UR_MSG_CLASS	3	9	2	08	1	MESSAGE CLASS
2	GCM_UR_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
2	GCM_UR_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
2	GCM_UR_PASSWD	6	22	4	test	2	PASSWORD
2	GCM_UR_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
2	GCM_UR_SUPPORT	9	31	1	0	1	SERVICE SUPPORT TYPE
2	GCM_UR_TDRS	7	26	3	AAA	2	TDRSS
2	GCM_UR_USER_ID	5	18	4	AM1	2	USER ID
3	GCM_FS_LINK	8	29	2	00	1	LINK
3	GCM_FS_MSG_CLASS	3	9	2	05	1	MESSAGE CLASS
3	GCM_FS_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
3	GCM_FS_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE

**Table C-2. Packet Definitions (3 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
3	GCM_FS_PASSWD	6	22	4	test	2	PASSWORD
3	GCM_FS_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
3	GCM_FS_TDRS	7	26	3	AAA	2	TDRSS
3	GCM_FS_USER_ID	5	18	4	AM1	2	USER ID
4	GCM_FE_LINK	8	29	2	00	1	LINK
4	GCM_FE_MSG_CLASS	3	9	2	06	1	MESSAGE CLASS
4	GCM_FE_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
4	GCM_FE_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
4	GCM_FE_PASSWD	6	22	4	test	2	PASSWORD
4	GCM_FE_POWER	9	31	1	0	1	POWER
4	GCM_FE_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
4	GCM_FE_TDRS	7	26	3	AAA	2	TDRSS
4	GCM_FE_USER_ID	5	18	4	AM1	2	USER ID
5	GCM_EU_LINK	8	29	2	00	1	LINK
5	GCM_EU_MSG_CLASS	3	9	2	07	1	MESSAGE CLASS
5	GCM_EU_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
5	GCM_EU_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
5	GCM_EU_PASSWD	6	22	4	test	2	PASSWORD
5	GCM_EU_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
5	GCM_EU_TDRS	7	26	3	AAA	2	TDRSS
5	GCM_EU_USER_ID	5	18	4	AM1	2	USER ID
6	GCM_MF_ANTENNA	10	32	1	0	1	USER DESPUN ANTENNA
6	GCM_MF_DOPCOMP	13	52	1	0	1	DOPPLER COMP REQD
6	GCM_MF_FREQ	12	42	10	0	1	RECV FREQUENCY
6	GCM_MF_LINK	8	29	2	00	1	LINK
6	GCM_MF_MSG_CLASS	3	9	2	04	1	MESSAGE CLASS
6	GCM_MF_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
6	GCM_MF_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
6	GCM_MF_PASSWD	6	22	4	test	2	PASSWORD
6	GCM_MF_RATE	11	33	9	0	1	DATA RATE
6	GCM_MF_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN

**Table C-2. Packet Definitions (4 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
6	GCM_MF_SUPPORT	9	31	1	0	1	SERVICE SUPPORT TYPE
6	GCM_MF_TDRS	7	26	3	AAA	2	TDRSS
6	GCM_MF_USER_ID	5	18	4	AM1	2	USER ID
7	GCM_SF_ANTENNA	10	32	1	0	1	USER DESPUN ANTENNA
7	GCM_SF_CONFIG_S	21	69	1	0	1	SHUTTLE DATA CONFIG
7	GCM_SF_DOPCOMP	17	65	1	0	1	DOPPLER COMPENSATION REQD
7	GCM_SF_DOPCOMP_S	18	66	1	0	1	SHUTTLE CARRIER
7	GCM_SF_FREQ	12	42	10	12345 67890	1	RECV FREQUENCY NORMAL
7	GCM_SF_FREQ_S	13	52	10	0	1	RECV FREQUENCY SHUTTLE
7	GCM_SF_LINK	8	29	2	01	1	LINK
7	GCM_SF_MSG_CLASS	3	9	2	04	1	MESSAGE CLASS
7	GCM_SF_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
7	GCM_SF_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
7	GCM_SF_PASSWD	6	22	4	test	2	PASSWORD
7	GCM_SF_PNDOP_S	19	67	1	0	1	SHUTTLE PN RATE
7	GCM_SF_PNMOD	16	64	1	0	1	COMMAND CHANNEL PN
7	GCM_SF_PNMOD_S	20	68	1	0	1	SHUTTLE PN MODULATION
7	GCM_SF_POLAR	14	62	1	0	1	POLARIZATION NORMAL
7	GCM_SF_POLAR_S	15	63	1	0	1	POLARIZATION SHUTTLE
7	GCM_SF_RATE	11	33	9	12345 6789	1	DATA RATE
7	GCM_SF_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
7	GCM_SF_SUPPORT	9	31	1	0	1	SERVICE SUPPORT TYPE
7	GCM_SF_TDRS	7	26	3	AAA	2	TDRSS
7	GCM_SF_USER_ID	5	18	4	AM1	2	USER ID

**Table C-2. Packet Definitions (5 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
8	GCM_KF_DOPCOMP	17	73	1	0	1	DOPPLER COMPENSATION NORMAL
8	GCM_KF_DOPCOMP_S	18	74	1		1	DOPPLER COMP SHUTTLE
8	GCM_KF_FREQ	12	50	10	12345 67890	1	RECV FREQUENCY NORMAL
8	GCM_KF_FREQ_S	13	60	10		1	RECV FREQUENCY SHUTTLE
8	GCM_KF_LINK	8	29	2	00	2	LINK
8	GCM_KF_MSG_CLASS	3	9	2	04	1	MESSAGE CLASS
8	GCM_KF_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
8	GCM_KF_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
8	GCM_KF_PASSWD	6	22	4	test	2	PASSWORD
8	GCM_KF_PNMOD	16	72	1	0	1	COMMAND CHANNEL PN
8	GCM_KF_POLAR	14	70	1	0	1	POLARIZATION NORMAL
8	GCM_KF_POLAR_S	15	71	1		1	POLARIZATION SHUTTLE
8	GCM_KF_RATE	10	32	9	0	1	DATA RATE NORMAL
8	GCM_KF_RATE_S	11	41	9	12345 6789	1	DATA RATE
8	GCM_KF_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
8	GCM_KF_SUPPORT	9	31	1	0	1	SERVICE SUPPORT TYPE
8	GCM_KF_TDRS	7	26	3	AAA	2	TDRSS
8	GCM_KF_USER_ID	5	18	4	AM1	2	USER ID
9	GCM_MR_ANTENNA	10	32	1	0	1	USER DESPUN ANTENNA
9	GCM_MR_FREQ	13	51	10	12345 67890	1	TRANSMIT FREQUENCY
9	GCM_MR_IFORMAT	17	72	1	0	1	DATA FORMAT I CHANNEL
9	GCM_MR_IG2INVERSION	21	76	1	0	1	G2 INVERSION I CHNL
9	GCM_MR_IJITTER	19	74	1	0	1	DATA BIT JITTER I CHNL
9	GCM_MR_IRATE	11	33	9	12345 6789	1	DATA RATE I CHANNEL

**Table C-2. Packet Definitions (6 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
9	GCM_MR_ISTREAM	25	80	3	0	1	DATA STREAM ID I CHNL
9	GCM_MR_LINK	8	29	2	00	1	LINK
9	GCM_MR_MAXEIRP	14	61	4	0	1	MAX EIRP
9	GCM_MR_MINEIRP	15	62	4	0	1	MIN EIRP
9	GCM_MR_MODE	23	78	1	0	1	MODE
9	GCM_MR_MSG_CLASS	3	9	2	04	1	MESSAGE CLASS
9	GCM_MR_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
9	GCM_MR_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
9	GCM_MR_NULLREQ	24	79	1	0	1	NULL REQD
9	GCM_MR_PASSWD	6	22	4	test	2	PASSWORD
9	GCM_MR_QFORMAT	18	73	1	0	1	DATA FORMAT Q CHANNEL
9	GCM_MR_QG2INVERSION	22	77	1	0	1	G2 INVERSION Q CHNL
9	GCM_MR_QJITTER	20	75	1	0	1	DATA BIT JITTER Q CHNL
9	GCM_MR_QRATE	12	42	9	12345 6789	1	DATA RATE Q CHANNEL
9	GCM_MR_QSTREAM	26	83	3	0	1	DATA STREAM ID Q CHNL
9	GCM_MR_RATIO	16	69	3	0	1	IQ CHANNEL POWER RATIO
9	GCM_MR_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
9	GCM_MR_SUPPORT	9	31	1	1	1	SERVICE SUPPORT TYPE
9	GCM_MR_TDRS	7	26	3	AAA	2	TDRSS
9	GCM_MR_USER_ID	5	18	4	AM1	2	USER ID
10	GCM_SR_ANTENNA	10	32	1	0	1	USER DESPUN ANTENNA
10	GCM_SR_DATAGROUP	27	97	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_DG1MODE	28	98	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_DG2TYPE	29	99	1	0	1	G2 INVERSION I CHNL
10	GCM_SR_FREQ	13	51	10	12345 67890	1	TRANSMIT FREQUENCY
10	GCM_SR_FREQ_S	26	87	1	0	1	DATA BIT JITTER Q CHNL

**Table C-2. Packet Definitions (7 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
10	GCM_SR_IFORMAT	21	82	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_IG2INVERSION	31	101	1	0	1	G2 INVERSION Q CHNL
10	GCM_SR_IJITTER	23	84	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_IRATE	11	33	9	12345 6789	1	DATA RATE I CHANNEL
10	GCM_SR_ISTREAM	33	103	3	0	1	DATA STREAM ID I CHNL
10	GCM_SR_JITTR_S	25	86	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_LINK	8	29	2	00	1	LINK
10	GCM_SR_MAXEIRP	16	63	4	0	1	IQ CHANNEL POWER RATIO
10	GCM_SR_MAXEIRP_S	18	71	4	0	1	DATA FORMAT Q CHANNEL
10	GCM_SR_MINEIRP	17	67	4	0	1	DATA FORMAT I CHANNEL
10	GCM_SR_MINEIRP_S	19	75	4	0	1	DATA BIT JITTER I CHNL
10	GCM_SR_MODE_S	30	100	1	0	1	G2 INVERSION I CHNL
10	GCM_SR_MSG_CLASS	3	9	2	04	1	MESSAGE CLASS
10	GCM_SR_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
10	GCM_SR_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
10	GCM_SR_PASSWD	6	22	4	test	2	PASSWORD
10	GCM_SR_POLAR	14	61	1	0	1	MAX EIRP
10	GCM_SR_POLAR_S	15	62	1	0	1	MIN EIRP
10	GCM_SR_QFORMAT	22	83	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_QG2INVERSION	32	102	1	0	1	G2 INVERSION Q CHNL
10	GCM_SR_QJITTER	24	85	1	0	1	DATA BIT JITTER Q CHNL
10	GCM_SR_QRATE	12	42	9	12345 6789	1	DATA RATE Q CHANNEL
10	GCM_SR_QSTREAM	34	106	3	0	1	DATA STREAM ID Q CHNL
10	GCM_SR_RATIO	20	79	3	0	1	DATA BIT JITTER I CHNL

**Table C-2. Packet Definitions (8 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
10	GCM_SR_STREAM_S	35	109	3	0	1	DATA STREAM ID Q CHNL
10	GCM_SR_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
10	GCM_SR_SUPPORT	9	31	1	1	1	SERVICE SUPPORT TYPE
10	GCM_SR_TDRS	7	26	3	AAA	2	TDRSS
10	GCM_SR_USER_ID	5	18	4	AM1	2	USER ID
11	GCM_KR_1FORMAT_S	30	107	1	0	1	FORMAT CHNL 1
11	GCM_KR_1JITTER_S	31	108	1	0	1	JITTER CHNL 1
11	GCM_KR_2FORMAT_S	32	109	1	0	1	FORMAT CHNL 2
11	GCM_KR_2JITTER_S	33	110	1	0	1	JITTER CHNL 2
11	GCM_KR_2RATE_S	34	111	9	0	1	DATA RATE CHNL 2
11	GCM_KR_3FORMAT_S	35	120	1	0	1	FORMAT CHNL 3
11	GCM_KR_3JITTER_S	36	121	1	0	1	JITTER CHNL 3
11	GCM_KR_3RATE_S	37	122	9	0	1	RATE CHNL 3
11	GCM_KR_AUTOTRACK	19	78	8	0	1	AUTOTRACK FLAG
11	GCM_KR_DATAGROUP	26	103	1	0	1	DATA GROUP
11	GCM_KR_DG1MODE	27	104	1	0	1	DG1 MODE
11	GCM_KR_DG2TYPE	28	105	1	0	1	DG2 TYPE
11	GCM_KR_FREQ	12	50	10	12345 67890	1	TRANSMIT FREQUENCY
11	GCM_KR_FREQ_S	25	93	10	0	1	SHUTTLE TRANS FREQ
11	GCM_KR_IFORMAT	21	89	1	0	1	DATA FORMAT I CHNL
11	GCM_KR_IG2INVERSION	38	131	1	0	1	CHNL I G2 INVERSION
11	GCM_KR_IJITTER	23	91	1	0	1	DATA BIT JITTER I CHNL
11	GCM_KR_IRATE	10	32	9	12345 6789	1	DATA RATE I CHANNEL
11	GCM_KR_ISTREAM	40	133	3	0	1	DATA STREAM ID I CHNL
11	GCM_KR_LINK	8	29	2	01	1	LINK
11	GCM_KR_MAXEIRP	15	62	4	0	1	MAX EIRP NORMAL
11	GCM_KR_MAXEIRP_S	17	70	4	0	1	MAX EIRP SHUTTLE
11	GCM_KR_MINEIRP	16	66	4	0	1	MIN EIRP NORMAL

**Table C-2. Packet Definitions (9 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
11	GCM_KR_MINEIRP_S	18	74	4	0	1	MIN EIRP SHUTLE
11	GCM_KR_MODE_S	29	106	1	0	1	SHUTTLE MODE
11	GCM_KR_MSG_CLASS	3	9	2	04	1	MESSAGE CLASS
11	GCM_KR_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
11	GCM_KR_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
11	GCM_KR_PASSWD	6	22	4	test	2	PASSWORD
11	GCM_KR_POLAR	13	60	1	0	1	POLARIZATION NORMAL
11	GCM_KR_POLAR_S	14	61	1	0	1	POLARIZATION SHUTTLE
11	GCM_KR_QFORMAT	22	90	1	0	1	DATA FORMAT Q CHNL
11	GCM_KR_QG2INVERSION	39	132	1	0	1	CHNL Q G2 INVERSION
11	GCM_KR_QJITTER	24	92	1	0	1	DATA BIT JITTER Q CHNL
11	GCM_KR_QRATE	11	41	9	12345 6789	1	DATA RATE Q CHANNEL
11	GCM_KR_QSTREAM	41	136	3	0	1	DATA STREAM ID Q CHNL
11	GCM_KR_RATIO	20	86	3	0	1	IQ CHNL RATIO
11	GCM_KR_STREAM1_S	42	139	3	0	1	DATA STREAM ID CHNL 1
11	GCM_KR_STREAM2_S	43	142	3	0	1	DATA STREAM ID CHNL 2
11	GCM_KR_STREAM3_S	44	145	3	0	1	DATA STREAM ID CHNL 3
11	GCM_KR_SUBCARRIER	45	148	1	0	1	SHUTTLE 1.024 MHZ SUBCARRIER_S
11	GCM_KR_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
11	GCM_KR_SUPPORT	9	31	1	0	1	SERVICE SUPPORT TYPE
11	GCM_KR_TDRS	7	26	3	AAA	2	TDRSS
11	GCM_KR_USER_ID	5	18	4	AM1	2	USER ID
12	GCM_DC_INHIBIT	9	31	1	0	1	SERVICE SUPPORT TYPE
12	GCM_DC_LINK	8	29	2	00	1	LINK
12	GCM_DC_MSG_CLASS	3	9	2	08	1	MESSAGE CLASS
12	GCM_DC_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
12	GCM_DC_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE

**Table C-2. Packet Definitions (10 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
12	GCM_DC_PASSWD	6	22	4	test	2	PASSWORD
12	GCM_DC_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
12	GCM_DC_TDRS	7	26	3	AAA	2	TDRSS
12	GCM_DC_USER_ID	5	18	4	AM1	2	USER ID
13	GCM_GD_FXD_PAT	7	27	2	00	2	FIXED PATTERN
13	GCM_GD_MSG_CLASS	3	9	2	02	1	MESSAGE CLASS
13	GCM_GD_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
13	GCM_GD_MSG_STAT	8	29	1	00	1	MESSAGE STATUS
13	GCM_GD_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
13	GCM_GD_REF_CLS	6	25	2	00	2	REF MESSAGE CLASS
13	GCM_GD_REF_ID	5	18	7	00000 00	2	REFERENCE ID
13	GCM_GD_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
13	GCM_GD_TIME	9	30	11	YYDD DHMM MSS	1	TIME
14	GCM_GS_ERR_ADDR	9	31	3	000	1	PARAM ERROR
14	GCM_GS_MSG_CLASS	3	9	2	01	1	MESSAGE CLASS
14	GCM_GS_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
14	GCM_GS_MSG_IND	7	27	2	00	2	REAL OR SIMUL IND
14	GCM_GS_MSG_TYPE	1	0	2	98	1	MESSAGE TYPE
14	GCM_GS_REF_CLS	6	25	2	00	2	REF MESSAGE CLASS
14	GCM_GS_REF_ID	5	18	7	00000 00	2	REFERENCE ID
14	GCM_GS_ST_CODE	8	29	2	00	1	STATUS CODE
14	GCM_GS_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
15	GCM_CT_MSG_CLASS	3	9	2	03	1	MESSAGE CLASS
15	GCM_CT_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
15	GCM_CT_MSG_TYPE	1	0	2	91	1	MESSAGE TYPE
15	GCM_CT_SUPIDEN	4	11	7	AM1G CMR	2	SUPIDEN
16	GCM_ER_CODE0	1	0	0	0	1	Accepted

**Table C-2. Packet Definitions (11 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
16	GCM_ER_CODE1	2	0	0	1	1	W: Syntax Error
16	GCM_ER_CODE10	11	0	0	10	1	W: No null vector assigned
16	GCM_ER_CODE11	12	0	0	11	1	W: Equip conflict
16	GCM_ER_CODE12	13	0	0	12	1	W: Required corresponding FWD service not in operation
16	GCM_ER_CODE13	14	0	0	13	1	W: Connectivity table error
16	GCM_ER_CODE14	15	0	0	14	1	W: No response received from WSC
16	GCM_ER_CODE15	16	0	0	15	1	
16	GCM_ER_CODE16	17	0	0	16	1	
16	GCM_ER_CODE17	18	0	0	17	1	
16	GCM_ER_CODE18	19	0	0	18	1	
16	GCM_ER_CODE19	20	0	0	19	1	
16	GCM_ER_CODE2	3	0	0	2	1	W: SHO ID not found
16	GCM_ER_CODE20	21	0	0	20	1	
16	GCM_ER_CODE21	22	0	0	21	1	N: Invalid parameter in MOC request
16	GCM_ER_CODE22	23	0	0	22	1	N: SUPIDEN conflicts with sched SUPIDEN
16	GCM_ER_CODE23	24	0	0	23	1	N: Service is not sch
16	GCM_ER_CODE24	25	0	0	24	1	N: Data rate exceeds allowable rate
16	GCM_ER_CODE25	26	0	0	25	1	N: MOC not authorized for this S/C
16	GCM_ER_CODE26	27	0	0	26	1	N: I/F chan not available
16	GCM_ER_CODE27	28	0	0	27	1	N: Not Used
16	GCM_ER_CODE28	29	0	0	28	1	N: GCM inappropriate to service type or config
16	GCM_ER_CODE29	30	0	0	29	1	N: Doppler comp inhibit inappropriate for config
16	GCM_ER_CODE3	4	0	0	3	1	W: Specified service not found

**Table C-2. Packet Definitions (12 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
16	GCM_ER_CODE30	31	0	0	30	1	N: WSC is down
16	GCM_ER_CODE31	32	0	0	31	1	N: Pending request for same service
16	GCM_ER_CODE4	5	0	0	4	1	W: Specified service is not active
16	GCM_ER_CODE5	6	0	0	5	1	W: Parameter Out of Range
16	GCM_ER_CODE6	7	0	0	6	1	W: Incoming queues full
16	GCM_ER_CODE7	8	0	0	7	1	W: Reserved
16	GCM_ER_CODE8	9	0	0	8	1	W: MOC request not applicable for service designated
16	GCM_ER_CODE9	10	0	0	9	1	W: Invalid MA null assignment
17	CDA_DestinationId	4	0	8	0	1	
17	CDA_FillSpare1	2	0	8	0	1	
17	CDA_FillSpare2	5	0	8	0	1	
17	CDA_FillSpare3	11	0	32	0	1	
17	CDA_GrndMsgHdrBlk	1	0	8	0	1	
17	CDA_MsgGeneration	6	0	56	0	1	
17	CDA_MsgLength	10	0	16	0	1	
17	CDA_MsgSeqNum	8	0	16	0	1	
17	CDA_SourceId	3	0	8	0	1	
17	CDA_SpcrfId	7	0	16	0	1	
17	CDA_VersionNum	9	0	16	0	1	
18	CDA_CcsdsPthStatBlk	5	0	1	0	1	
18	CDA_CcsdsVcdtStatBlk	4	0	1	0	1	
18	CDA_FillSpare10	10	0	72	0	1	
18	CDA_FillSpare13	13	0	64	0	1	
18	CDA_FillSpare7	7	0	1	0	1	
18	CDA_FillSpare8	8	0	1	0	1	
18	CDA_FillSpare9	9	0	1	0	1	
18	CDA_FwdLkStatBlk	3	0	1	0	1	
18	CDA_GrndCommStatBlk	6	0	1	0	1	
18	CDA_RtnLkPhyChanBlk	2	0	1	0	1	
18	CDA_SCSId	12	0	160	0	2	
18	CDA_SeqCntSCS	11	0	16	0	1	
19	CDA_CntCADURec	11	0	32	0	1	

**Table C-2. Packet Definitions (13 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
19	CDA_CntCADURec2	49	0	32	0	1	
19	CDA_CntCADURec3	88	0	32	0	1	
19	CDA_CntCADURec4	123	0	32	0	1	
19	CDA_CntCADURec5	161	0	32	0	1	
19	CDA_CntCADURec6	199	0	32	0	1	
19	CDA_CntFlywCADU	12	0	32	0	1	
19	CDA_CntFlywCADU2	50	0	32	0	1	
19	CDA_CntFlywCADU3	89	0	32	0	1	
19	CDA_CntFlywCADU4	124	0	32	0	1	
19	CDA_CntFlywCADU5	162	0	32	0	1	
19	CDA_CntFlywCADU6	200	0	32	0	1	
19	CDA_CntFrmSynErr	10	0	32	0	1	
19	CDA_CntFrmSynErr2	48	0	32	0	1	
19	CDA_CntFrmSynErr3	87	0	32	0	1	
19	CDA_CntFrmSynErr4	122	0	32	0	1	
19	CDA_CntFrmSynErr5	160	0	32	0	1	
19	CDA_CntFrmSynErr6	198	0	32	0	1	
19	CDA_CntFrmSynLos	13	0	32	0	1	
19	CDA_CntFrmSynLos2	51	0	32	0	1	
19	CDA_CntFrmSynLos3	90	0	32	0	1	
19	CDA_CntFrmSynLos4	125	0	32	0	1	
19	CDA_CntFrmSynLos5	163	0	32	0	1	
19	CDA_CntFrmSynLos6	201	0	32	0	1	
19	CDA_CntSymCorVCDU	22	0	32	0	1	
19	CDA_CntSymCorVCDU02	27	0	32	0	1	
19	CDA_CntSymCorVCDU03	33	0	32	0	1	
19	CDA_CntSymCorVCDU04	38	0	32	0	1	
19	CDA_CntSymCorVCDU21	60	0	32	0	1	
19	CDA_CntSymCorVCDU22	65	0	32	0	1	
19	CDA_CntSymCorVCDU23	71	0	32	0	1	
19	CDA_CntSymCorVCDU24	77	0	32	0	1	
19	CDA_CntSymCorVCDU31	99	0	32	0	1	
19	CDA_CntSymCorVCDU32	103	0	32	0	1	
19	CDA_CntSymCorVCDU33	109	0	32	0	1	
19	CDA_CntSymCorVCDU34	112	0	32	0	1	
19	CDA_CntSymCorVCDU41	135	0	32	0	1	

**Table C-2. Packet Definitions (14 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
19	CDA_CntSymCorVCDU42	141	0	32	0	1	
19	CDA_CntSymCorVCDU43	147	0	32	0	1	
19	CDA_CntSymCorVCDU44	150	0	32	0	1	
19	CDA_CntSymCorVCDU51	173	0	32	0	1	
19	CDA_CntSymCorVCDU52	179	0	32	0	1	
19	CDA_CntSymCorVCDU53	185	0	32	0	1	
19	CDA_CntSymCorVCDU54	188	0	32	0	1	
19	CDA_CntSymCorVCDU61	211	0	32	0	1	
19	CDA_CntSymCorVCDU62	217	0	32	0	1	
19	CDA_CntSymCorVCDU63	220	0	32	0	1	
19	CDA_CntSymCorVCDU64	228	0	32	0	1	
19	CDA_CntUncorVCDU	14	0	32	0	1	
19	CDA_CntUncorVCDU2	52	0	32	0	1	
19	CDA_CntUncorVCDU3	91	0	32	0	1	
19	CDA_CntUncorVCDU4	126	0	32	0	1	
19	CDA_CntUncorVCDU5	164	0	32	0	1	
19	CDA_CntUncorVCDU6	202	0	32	0	1	
19	CDA_CntVCDUById	21	0	32	0	1	
19	CDA_CntVCDUById02	26	0	32	0	1	
19	CDA_CntVCDUById03	32	0	32	0	1	
19	CDA_CntVCDUById04	37	0	32	0	1	
19	CDA_CntVCDUById21	59	0	32	0	1	
19	CDA_CntVCDUById22	64	0	32	0	1	
19	CDA_CntVCDUById23	70	0	32	0	1	
19	CDA_CntVCDUById24	76	0	32	0	1	
19	CDA_CntVCDUById31	98	0	32	0	1	
19	CDA_CntVCDUById32	102	0	32	0	1	
19	CDA_CntVCDUById33	108	0	32	0	1	
19	CDA_CntVCDUById34	111	0	32	0	1	
19	CDA_CntVCDUById41	134	0	32	0	1	
19	CDA_CntVCDUById42	140	0	32	0	1	
19	CDA_CntVCDUById43	146	0	32	0	1	
19	CDA_CntVCDUById44	149	0	32	0	1	
19	CDA_CntVCDUById51	172	0	32	0	1	
19	CDA_CntVCDUById52	178	0	32	0	1	
19	CDA_CntVCDUById53	184	0	32	0	1	

**Table C-2. Packet Definitions (15 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
19	CDA_CntVCDUById54	187	0	32	0	1	
19	CDA_CntVCDUById61	210	0	32	0	1	
19	CDA_CntVCDUById62	216	0	32	0	1	
19	CDA_CntVCDUById63	219	0	32	0	1	
19	CDA_CntVCDUById64	227	0	32	0	1	
19	CDA_CntVCDUCRCErr	15	0	32	0	1	
19	CDA_CntVCDUCRCErr2	53	0	32	0	1	
19	CDA_CntVCDUCRCErr3	92	0	32	0	1	
19	CDA_CntVCDUCRCErr4	127	0	32	0	1	
19	CDA_CntVCDUCRCErr5	165	0	32	0	1	
19	CDA_CntVCDUCRCErr6	203	0	32	0	1	
19	CDA_EDOSPhysPortId	4	0	8	0	1	
19	CDA_EDOSPhysPortId2	42	0	8	0	1	
19	CDA_EDOSPhysPortId3	81	0	8	0	1	
19	CDA_EDOSPhysPortId4	116	0	8	0	1	
19	CDA_EDOSPhysPortId5	154	0	8	0	1	
19	CDA_EDOSPhysPortId6	192	0	8	0	1	
19	CDA_EGTPhysPortId	3	0	64	0	2	
19	CDA_EGTPhysPortId2	41	0	64	0	2	
19	CDA_EGTPhysPortId3	80	0	64	0	2	
19	CDA_EGTPhysPortId4	115	0	64	0	2	
19	CDA_EGTPhysPortId5	153	0	64	0	2	
19	CDA_EGTPhysPortId6	191	0	64	0	2	
19	CDA_FillSpare	17	0	24	0	1	
19	CDA_FillSpare14	2	0	24	0	1	
19	CDA_FillSpare15	5	0	4	0	1	
19	CDA_FillSpare152	43	0	4	0	1	
19	CDA_FillSpare153	82	0	4	0	1	
19	CDA_FillSpare154	117	0	4	0	1	
19	CDA_FillSpare155	155	0	4	0	1	
19	CDA_FillSpare156	193	0	4	0	1	
19	CDA_FillSpare16	9	0	16	0	1	
19	CDA_FillSpare163	86	0	16	0	1	
19	CDA_FillSpare164	121	0	16	0	1	
19	CDA_FillSpare165	159	0	16	0	1	
19	CDA_FillSpare166	197	0	16	0	1	

**Table C-2. Packet Definitions (16 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
19	CDA_FillSpare18	18	0	16	0	1	
19	CDA_FillSpare182	47	0	16	0	1	
19	CDA_FillSpare1821	56	0	16	0	1	
19	CDA_FillSpare1831	95	0	16	0	1	
19	CDA_FillSpare1841	131	0	16	0	1	
19	CDA_FillSpare1851	169	0	16	0	1	
19	CDA_FillSpare1861	207	0	16	0	1	
19	CDA_FillSpare19	19	0	10	0	1	
19	CDA_FillSpare1921	57	0	10	0	1	
19	CDA_FillSpare1931	96	0	10	0	1	
19	CDA_FillSpare1941	132	0	10	0	1	
19	CDA_FillSpare1951	170	0	10	0	1	
19	CDA_FillSpare1961	208	0	10	0	1	
19	CDA_FillSpare20	23	0	64	0	1	
19	CDA_FillSpare2002	28	0	64	0	1	
19	CDA_FillSpare2003	34	0	64	0	1	
19	CDA_FillSpare2004	39	0	64	0	1	
19	CDA_FillSpare2021	61	0	64	0	1	
19	CDA_FillSpare2022	66	0	64	0	1	
19	CDA_FillSpare2023	72	0	64	0	1	
19	CDA_FillSpare2024	78	0	64	0	1	
19	CDA_FillSpare2031	100	0	64	0	1	
19	CDA_FillSpare2032	104	0	64	0	1	
19	CDA_FillSpare2033	110	0	64	0	1	
19	CDA_FillSpare2034	113	0	64	0	1	
19	CDA_FillSpare2041	136	0	64	0	1	
19	CDA_FillSpare2042	142	0	64	0	1	
19	CDA_FillSpare2043	148	0	64	0	1	
19	CDA_FillSpare2044	151	0	64	0	1	
19	CDA_FillSpare2051	174	0	64	0	1	
19	CDA_FillSpare2052	180	0	64	0	1	
19	CDA_FillSpare2053	186	0	64	0	1	
19	CDA_FillSpare2054	189	0	64	0	1	
19	CDA_FillSpare2061	212	0	64	0	1	
19	CDA_FillSpare2062	218	0	64	0	1	
19	CDA_FillSpare2063	221	0	64	0	1	

**Table C-2. Packet Definitions (17 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
19	CDA_FillSpare2064	229	0	64	0	1	
19	CDA_FillSpare21	230	0	64	0	1	
19	CDA_FillSpareB	40	0	64	0	1	
19	CDA_FillSpareB2	55	0	24	0	1	
19	CDA_FillSpareC	79	0	64	0	1	
19	CDA_FillSpareC2	94	0	24	0	1	
19	CDA_FillSpareD	114	0	64	0	1	
19	CDA_FillSpareD2	129	0	24	0	1	
19	CDA_FillSpareE	152	0	64	0	1	
19	CDA_FillSpareE2	167	0	24	0	1	
19	CDA_FillSpareF	190	0	64	0	1	
19	CDA_FillSpareF2	205	0	24	0	1	
19	CDA_FrmSynStatMode	8	0	2	0	1	
19	CDA_FrmSynStatMode3	85	0	2	0	1	
19	CDA_FrmSynStatMode4	120	0	2	0	1	
19	CDA_FrmSynStatMode5	158	0	2	0	1	
19	CDA_FrmSynStatMode6	196	0	2	0	1	
19	CDA_FrmSynStatOrd3	84	0	1	0	1	
19	CDA_FrmSynStatOrd4	119	0	1	0	1	
19	CDA_FrmSynStatOrd5	157	0	1	0	1	
19	CDA_FrmSynStatOrd6	195	0	1	0	1	
19	CDA_FrmSynStatPol3	83	0	1	0	1	
19	CDA_FrmSynStatPol4	118	0	1	0	1	
19	CDA_FrmSynStatPol5	156	0	1	0	1	
19	CDA_FrmSynStatPol6	194	0	1	0	1	
19	CDA_FrmSynStatusMode	46	0	2	0	1	
19	CDA_FrmSynStatusOrd	7	0	1	0	1	
19	CDA_FrmSynStatusOrd2	45	0	1	0	1	
19	CDA_FrmSynStatusPol	6	0	1	0	1	
19	CDA_FrmSynStatusPol2	44	0	1	0	1	
19	CDA_NumRtnLkPLPP	1	0	8	0	1	
19	CDA_NumVCID1	16	0	8	0	1	
19	CDA_NumVCID22	54	0	8	0	1	
19	CDA_NumVCID23	93	0	8	0	1	
19	CDA_NumVCID24	128	0	8	0	1	
19	CDA_NumVCID25	166	0	8	0	1	

**Table C-2. Packet Definitions (18 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
19	CDA_NumVCID26	204	0	8	0	1	
19	CDA_VCID1	20	0	6	0	1	
19	CDA_VCID121	58	0	6	0	1	
19	CDA_VCID131	97	0	6	0	1	
19	CDA_VCID141	133	0	6	0	1	
19	CDA_VCID151	171	0	6	0	1	
19	CDA_VCID161	209	0	6	0	1	
20	CDA_FLCntCommBlk	9	0	64	0	1	
20	CDA_FLCntCommBlk2	14	0	64	0	1	
20	CDA_FLCntCommBlk3	19	0	64	0	1	
20	CDA_FLCntCommBlk4	24	0	64	0	1	
20	CDA_FLEDOSPhysPtld	7	0	8	0	1	
20	CDA_FLEDOSPhysPtld2	12	0	8	0	1	
20	CDA_FLEDOSPhysPtld3	17	0	8	0	1	
20	CDA_FLEDOSPhysPtld4	22	0	8	0	1	
20	CDA_FLEGTPPhysPtld	6	0	64	0	2	
20	CDA_FLEGTPPhysPtld2	11	0	64	0	2	
20	CDA_FLEGTPPhysPtld4	21	0	64	0	2	
20	CDA_FLGTPPhysPtld3	16	0	64	0	2	
20	CDA_FillSpare22	5	0	24	0	1	
20	CDA_FillSpare23	8	0	24	0	1	
20	CDA_FillSpare232	13	0	24	0	1	
20	CDA_FillSpare233	18	0	24	0	1	
20	CDA_FillSpare234	23	0	24	0	1	
20	CDA_FillSpare24	10	0	64	0	1	
20	CDA_FillSpare242	15	0	64	0	1	
20	CDA_FillSpare243	20	0	64	0	1	
20	CDA_FillSpare244	25	0	64	0	1	
20	CDA_FillSpare25	26	0	64	0	1	
20	CDA_SCCntComDataBlk	1	0	64	0	1	
20	CDA_SCDaEDOSofGdHdr	2	0	64	0	1	
20	CDA_SCGrndMsgHdrEOC	3	0	32	0	1	
20	CDA_SCNumFLPP	4	0	8	0	1	
21	CDA_CntVcdurLnk	7	0	32	0	1	
21	CDA_CntVcdurLnk2	13	0	32	0	1	
21	CDA_CntVcdurLnk3	19	0	32	0	1	

**Table C-2. Packet Definitions (19 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
21	CDA_CntVcdurLnk4	25	0	32	0	1	
21	CDA_CntVcdusEqld2	12	0	32	0	1	
21	CDA_CntVcdusEqld3	18	0	32	0	1	
21	CDA_CntVcdusEqld4	24	0	32	0	1	
21	CDA_CntVcdusEqlduld	6	0	32	0	1	
21	CDA_FillSpare26	2	0	24	0	1	
21	CDA_FillSpare27	3	0	10	0	1	
21	CDA_FillSpare272	9	0	10	0	1	
21	CDA_FillSpare273	15	0	10	0	1	
21	CDA_FillSpare274	21	0	10	0	1	
21	CDA_FillSpare28	5	0	16	0	1	
21	CDA_FillSpare282	11	0	16	0	1	
21	CDA_FillSpare283	17	0	16	0	1	
21	CDA_FillSpare284	23	0	16	0	1	
21	CDA_FillSpare29	8	0	64	0	1	
21	CDA_FillSpare292	14	0	64	0	1	
21	CDA_FillSpare293	20	0	64	0	1	
21	CDA_FillSpare294	26	0	64	0	1	
21	CDA_NumVCIDScid	1	0	8	0	1	
21	CDA_VCID2	4	0	6	0	1	
21	CDA_VCID21	10	0	6	0	1	
21	CDA_VCID22	16	0	6	0	1	
21	CDA_VCID23	22	0	6	0	1	
22	UPD_TT_FWD_DELTA_TIM	13	39	3		1	FORWARD DELTA TIME
22	UPD_TT_FWD_PN_TD	8	24	4		2	FWD PN TD
22	UPD_TT_MAR_ID	7	22	2	01	5	MAR ID
22	UPD_TT_MSG_CLASS	3	9	2	66	5	MESSAGE CLASS
22	UPD_TT_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
22	UPD_TT_MSG_TYPE	1	0	2	92	5	MESSAGE TYPE
22	UPD_TT_PB1_TIMELAY	11	33	5		2	PB1 TIMELAY
22	UPD_TT_PN_LOCK	12	38	1		5	SERVICE SUPPORT TYPE
22	UPD_TT_RP_COUNT	10	32	1		1	RP COUNT
22	UPD_TT_RTN_DELTA_TIM	14	42	3		1	RETURN DELTA TIME
22	UPD_TT_RTN_PN_TD	9	28	4		2	RTN PN TD

**Table C-2. Packet Definitions (20 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
22	UPD_TT_SUBTYPE	6	21	1	0	5	SUBTYPE
22	UPD_TT_SUPIDEN	4	11	7	A1873 MS	2	SUPIDEN
22	UPD_TT_TDRS	5	18	3	AAA	2	TDRSS
23	UPD_CT_MSG_CLASS	3	9	2	03	5	MESSAGE CLASS
23	UPD_CT_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
23	UPD_CT_MSG_TYPE	1	0	2	91	5	MESSAGE TYPE
23	UPD_CT_SUPIDEN	4	11	7	A1873 MS	2	SUPIDEN
24	UPD_RC_DLY_TIME	16	96	9		2	DELAY TIME
24	UPD_RC_FIX_PT	14	66	28		2	FIX PT
24	UPD_RC_ISTART_DELAY	8	24	7		2	I START
24	UPD_RC_ISTOP_DELAY	11	45	7		2	I STOP DELAY
24	UPD_RC_ITD_ICHAN	17	105	7	12345 67	2	ITD I CHANNEL
24	UPD_RC_ITD_QCHAN	18	112	7	12345 67	2	ITD Q CHANNEL
24	UPD_RC_MAR_ID	7	22	2	01	5	MAR ID
24	UPD_RC_MSG_CLASS	3	9	2	62	5	MESSAGE CLASS
24	UPD_RC_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
24	UPD_RC_MSG_TYPE	1	0	2	92	5	MESSAGE TYPE
24	UPD_RC_QSTART_DELAY	9	31	7		2	Q START
24	UPD_RC_QSTOP_DELAY	12	52	7		2	Q STOP DELAY
24	UPD_RC_RP_COUNT	15	94	2		1	RP COUNT
24	UPD_RC_SPARE	10	38	7		4	SPARE
24	UPD_RC_SPARE2	13	59	7		4	SPARE2
24	UPD_RC_SPARE3	19	119	7		4	ITD SPARE 3
24	UPD_RC_SUBTYPE	6	21	1	0	5	SUBTYPE
24	UPD_RC_SUPIDEN	4	11	7	A1873 MS	2	SUPIDEN
24	UPD_RC_TDRS	5	18	3	000	2	TDRSS
25	UPD_RM_FUNCTION	7	26	1	0	5	FUNCTION
25	UPD_RM_MSG_CLASS	3	9	2	04	5	MESSAGE CLASS
25	UPD_RM_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
25	UPD_RM_MSG_TYPE	1	0	2	92	5	MESSAGE TYPE
25	UPD_RM_PASSWD	6	22	4	ECT2	2	PASSWORD

**Table C-2. Packet Definitions (21 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
25	UPD_RM_SUPIDEN	4	11	7	A1873 MS	2	SUPIDEN
25	UPD_RM_USER_ID	5	18	4	EOS	2	USER ID
26	UPD_AF_MAR_ID	7	22	2	01	5	MAR ID
26	UPD_AF_MSG_CLASS	3	9	2	63	5	MESSAGE CLASS
26	UPD_AF_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
26	UPD_AF_MSG_TYPE	1	0	2	92	5	MESSAGE TYPE
26	UPD_AF_SUBTYPE	6	21	1	0	5	SUBTYPE
26	UPD_AF_SUPIDEN	4	11	7	A1873 MS	2	SUPIDEN
26	UPD_AF_TDRS	5	18	3	000	2	TDRSS
27	UPD_UH_INDICATOR	6	20	2	00	5	INDICATOR
27	UPD_UH_MSG_CLASS	3	9	2		5	MESSAGE CLASS
27	UPD_UH_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
27	UPD_UH_MSG_TYPE	1	0	2	91	5	MESSAGE TYPE
27	UPD_UH_SUPIDEN	4	11	7	A1873 MS	2	SUPIDEN
27	UPD_UH_VEH_ID	5	18	2	NN	2	VEH_ID
28	UPD_SH_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
28	UPD_SH_NUM_SRV	9	36	2	01	1	NUM SRV
28	UPD_SH_REF_WD	11	99	1	0	5	REF WD
28	UPD_SH_SPARE	3	9	1		4	SPARE
28	UPD_SH_SPARE2	10	38	61		4	SPARE
28	UPD_SH_SRV_TYPE	1	0	2	05	5	SERVICE TYPE
28	UPD_SH_TDRS	4	10	3	AAA	2	SUPIDEN
28	UPD_SH_TDRS_A1	5	13	4	1234	2	TDRS A1
28	UPD_SH_TDRS_A2	6	17	4	1234	2	TDRS A2
28	UPD_SH_TDRS_A3	7	21	4	1234	2	TDRS A3
28	UPD_SH_TIME_TAG	8	25	11	00	2	TIME TAG
29	UPD_MH_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
29	UPD_MH_NUM_SRV	9	36	2	01	1	NUM SRV
29	UPD_MH_REF_WD	14	99	1	0	5	REF WD
29	UPD_MH_SPARE	3	9	1		4	SPARE
29	UPD_MH_SPARE2	10	38	1		4	SPARE1
29	UPD_MH_SPARE3	11	39	4		4	SPARE2
29	UPD_MH_SPARE4	12	42	2		4	SPARE3

**Table C-2. Packet Definitions (22 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
29	UPD_MH_SPARE5	13	45	54		4	SPARE4
29	UPD_MH_SRV_TYPE	1	0	2	06	5	SERVICE TYPE
29	UPD_MH_TDRS	4	10	3	AAA	2	SUPIDEN
29	UPD_MH_TDRS_A1	5	13	4	1234	2	TDRS A1
29	UPD_MH_TDRS_A2	6	17	4	1234	2	TDRS A2
29	UPD_MH_TDRS_A3	7	21	4	1234	2	TDRS A3
29	UPD_MH_TIME_TAG	8	25	11	00	1	TIME TAG
30	UPD_SM_MSG_ID	2	2	7	00000 00	2	MESSAGE ID
30	UPD_SM_NUM_SRV	9	36	2	01	1	NUM SRV
30	UPD_SM_REF_WD	11	99	1	0	5	REF Wd
30	UPD_SM_SPARE	3	9	1		4	SPARE
30	UPD_SM_SPARE2	10	38	61		4	SPARE2
30	UPD_SM_SRV_TYPE	1	0	2	07	5	SERVICE TYPE
30	UPD_SM_TDRS	4	10	3	AAA	2	SUPIDEN
30	UPD_SM_TDRS_A1	5	13	4	1234	2	TDRS A1
30	UPD_SM_TDRS_A2	6	17	4	1234	2	TDRS A2
30	UPD_SM_TDRS_A3	7	21	4	1234	2	TDRS A3
30	UPD_SM_TIME_TAG	8	25	11	00	2	TIME TAG
31	UPD_SF_BER_S	30	67	4	0	4	BER S
31	UPD_SF_CFG_S	24	51	1		4	CFG S
31	UPD_SF_CLOCK	19	45	1	0	5	CLOCK
31	UPD_SF_CLOCK_S	26	53	1		4	CLOCK S
31	UPD_SF_CMD_PN	14	28	1	0	5	CMD PN
31	UPD_SF_DATA_VALIDITY	12	26	1	0	5	DATA VALIDITY
31	UPD_SF_DENSITY	20	46	2	1234	2	DENSITY
31	UPD_SF_DENSITY_S	27	54	2		4	DENSITY
31	UPD_SF_DOP_COMP	15	29	1	0	5	DOP COMP
31	UPD_SF_DOP_COMP_S	21	48	1		4	DOP COMP S
31	UPD_SF_DRP_S	29	59	8		4	DRP S
31	UPD_SF_EIRP	16	30	4	1234	2	EIRP
31	UPD_SF_FREQ	17	34	10	00000 0	2	FREQ
31	UPD_SF_LOCK_S	28	56	3		4	LOCK S
31	UPD_SF_PN_MOD_S	22	49	1		4	PN MOD S
31	UPD_SF_PN_RATE_S	23	50	1		4	PN RATE S
31	UPD_SF_POLAR	10	24	1	0	5	POLAR

**Table C-2. Packet Definitions (23 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
31	UPD_SF_POWER	18	44	1	0	5	POWER
31	UPD_SF_REF_WD	32	99	1	0	5	REF WD
31	UPD_SF_RF_PT_AZM	7	15	4	+123	2	RF PT AZM
31	UPD_SF_RF_PT_ELV	8	19	4	+123	2	RF PT ELV
31	UPD_SF_SPARE	6	12	3		4	SPARE
31	UPD_SF_SPARE2	13	27	1		4	SPARE2
31	UPD_SF_SPARE3	31	71	28		4	SPARE3
31	UPD_SF_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
31	UPD_SF_SRV_CFG	9	23	1	1	5	SRV CFG
31	UPD_SF_STATUS	11	25	1	0	5	STAUS
31	UPD_SF_SUBGROUP	5	11	1	0	5	SUBGROUP
31	UPD_SF_SUBTYPE	4	10	1	1	5	SUBTYPE
31	UPD_SF_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
31	UPD_SF_SYNC_S	25	52	1		4	SYNC S
31	UPD_SF_VEH_IC	3	8	2	NN	2	VEH IC
32	UPD_KF_BER_S	26	63	4		4	BER S
32	UPD_KF_CLOCK	19	45	1	0	5	CLOCK
32	UPD_KF_CLOCK_S	22	49	1		4	CLOCK S
32	UPD_KF_CMD_PN	14	28	1	0	5	CMD PN
32	UPD_KF_DATA_VALIDITY	12	26	1	0	5	DATA VALIDITY
32	UPD_KF_DENSITY	20	46	2	1234	2	DENSITY
32	UPD_KF_DENSITY_S	23	50	2		4	DENSITY
32	UPD_KF_DOP_COMP	15	29	1	0	5	DOP COMP
32	UPD_KF_DRP_S	25	55	8		4	DRP S
32	UPD_KF_EIRP	16	30	4	1234	2	EIRP
32	UPD_KF_FREQ	17	34	10	00000 0	2	FREG
32	UPD_KF_LOCK_S	24	52	3		4	LOCK S
32	UPD_KF_POLAR	10	24	1	0	5	POLAR
32	UPD_KF_POWER	18	44	1	0	5	POWER
32	UPD_KF_REF_WD	28	99	1	0	5	REF WD
32	UPD_KF_RF_PT_AZM	7	15	4	+123	2	RF PT AZM
32	UPD_KF_RF_PT_ELV	8	19	4	+123	2	RF PT ELV
32	UPD_KF_SPARE	6	12	3		4	SPARE
32	UPD_KF_SPARE2	13	27	1		4	SPARE2
32	UPD_KF_SPARE3	27	67	32		4	SPARE3

**Table C-2. Packet Definitions (24 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
32	UPD_KF_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
32	UPD_KF_SRV_CFG	9	23	1	1	5	SRV CFG
32	UPD_KF_STATUS	11	25	1	0	5	STAUS
32	UPD_KF_SUBGROUP	5	11	1	0	5	SUBGROUP
32	UPD_KF_SUBTYPE	4	10	1	1	5	SUBTYPE
32	UPD_KF_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
32	UPD_KF_SYNC_S	21	48	1		4	SYNC S
32	UPD_KF_VEH_IC	3	8	2	NN	2	VEH IC
33	UPD_S1_1_IBER	22	44	1		5	1 IBER
33	UPD_S1_1_IBER_DATA	53	91	1	0	5	1 IBER DATA
33	UPD_S1_1_ILOCK	20	42	1	1234	5	1 ILOCK
33	UPD_S1_1_QBER	23	45	1		5	1 QBER
33	UPD_S1_1_QBER_DATA	54	92	1	0	5	1 QBER DATA
33	UPD_S1_1_QLOCK	21	43	1		5	1 QLOCK
33	UPD_S1_1_RCVR	16	30	1	0	5	1 RCVR
33	UPD_S1_1_SIG	17	31	5	00000 0	2	1 SIG
33	UPD_S1_2_IBER	30	60	1		5	2 IBER
33	UPD_S1_2_IBER_DATA	55	93	1	0	5	2 IBER DATA
33	UPD_S1_2_ILOCK	28	58	1	1234	5	2 ILOCK
33	UPD_S1_2_QBER	31	61	1		5	2 QBER
33	UPD_S1_2_QBER_DATA	56	94	1	0	5	2 QBER DATA
33	UPD_S1_2_QLOCK	29	59	1	0	5	2 QLOCK
33	UPD_S1_2_RCVR	24	46	1	0	5	2 RCVR
33	UPD_S1_2_SIG	25	47	5	0000	2	2 SIG
33	UPD_S1_CHN_CFG	39	71	1	0	5	CHN CFG
33	UPD_S1_CONFIG	44	76	1	0	5	CONFIG
33	UPD_S1_DATA_VALIDITY	12	26	1	0	5	DATA VALIDITY
33	UPD_S1_DEINT	32	62	1	0	5	DEINT
33	UPD_S1_DOP_TRK	15	29	1	0	5	DOP TRK
33	UPD_S1_IQ_RATIO	36	66	3	0	2	IQ RATIO
33	UPD_S1_I_CODE	40	72	1	0	5	I CODE
33	UPD_S1_I_DFMT	34	64	1	0	5	I DFMT
33	UPD_S1_I_G2INV	42	74	1	0	5	I G2INV
33	UPD_S1_I_SFMT	37	69	1	0	5	I SFMT
33	UPD_S1_MODE	46	78	1	0	5	MODE

**Table C-2. Packet Definitions (25 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
33	UPD_S1_POLAR	10	24	1	0	5	POLAR
33	UPD_S1_Q_CODE	41	73	1	0	5	Q CODE
33	UPD_S1_Q_DFMT	35	65	1	0	5	Q DFMT
33	UPD_S1_Q_G2INV	43	75	1	0	5	Q G2INV
33	UPD_S1_Q_SFMT	38	70	1	0	5	Q SFMT
33	UPD_S1_RCVR_CFG	14	28	1	0	5	RCVR CFG
33	UPD_S1_RCVR_COH	47	79	1	0	5	RCVR COH
33	UPD_S1_REF_WD	58	99	1	0	5	REF WD
33	UPD_S1_RF_PT_AZM	7	15	4	+123	2	RF PT AZM
33	UPD_S1_RF_PT_ELV	8	19	4	+123	2	RF PT ELV
33	UPD_S1 RNG TRK	45	77	1	0	5	RNG TRK
33	UPD_S1_SPARE	6	12	3		4	SPARE
33	UPD_S1_SPARE10	50	84	3		4	SPARE10
33	UPD_S1_SPARE11	51	87	3		4	SPARE11
33	UPD_S1_SPARE12	57	95	4		4	SPARE12
33	UPD_S1_SPARE2	13	27	1		4	SPARE2
33	UPD_S1_SPARE3	18	36	1		4	SPARE3
33	UPD_S1_SPARE4	19	37	5		4	SPARE4
33	UPD_S1_SPARE5	26	52	1		4	SPARE5
33	UPD_S1_SPARE6	27	53	5		4	SPARE6
33	UPD_S1_SPARE7	33	63	1		4	SPARE7
33	UPD_S1_SPARE8	48	80	3		4	SPARE8
33	UPD_S1_SPARE9	49	83	1		4	SPARE9
33	UPD_S1_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
33	UPD_S1_SRV_CFG	9	23	1	1	5	SRV CFG
33	UPD_S1_SSA_COMB	52	90	1	0	5	SSA COMB
33	UPD_S1_STATUS	11	25	1	0	5	STAUS
33	UPD_S1_SUBGROUP	5	11	1	0	5	SUBGROUP
33	UPD_S1_SUBTYPE	4	10	1	1	5	SUBTYPE
33	UPD_S1_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
33	UPD_S1_VEH_IC	3	8	2	NN	2	VEH IC
34	UPD_S2_1_IBER	22	44	1		5	1 IBER
34	UPD_S2_1_IBER_DATA	51	89	1	0	5	1 IBER DATA
34	UPD_S2_1_ILOCK	20	42	1	1234	5	1 ILOCK
34	UPD_S2_1_QBER	23	45	1		5	1 QBER
34	UPD_S2_1_QBER_DATA	52	90	1	0	5	1 QBER DATA

**Table C-2. Packet Definitions (26 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
34	UPD_S2_1_QLOCK	21	43	1		5	1 QLOCK
34	UPD_S2_1_RCVR	16	30	1	0	5	1 RCVR
34	UPD_S2_1_SIG	17	31	5	00000 0	2	1 SIG
34	UPD_S2_2_IBER	30	60	1		5	2 IBER
34	UPD_S2_2_IBER_DATA	53	91	1	0	5	2 IBER DATA
34	UPD_S2_2_ILOCK	28	58	1	1234	5	2 ILOCK
34	UPD_S2_2_QBER	31	61	1		5	2 QBER
34	UPD_S2_2_QBER_DATA	54	92	1	0	5	2 QBER DATA
34	UPD_S2_2_QLOCK	29	59	1		5	2 QLOCK
34	UPD_S2_2_RCVR	24	46	1	0	5	2 RCVR
34	UPD_S2_2_SIG	25	47	5	00000	2	2 SIG
34	UPD_S2_CHN_CFG	39	71	1	0	5	CHN CFG
34	UPD_S2_DATA_VALIDITY	12	26	1	0	5	DATA VALIDITY
34	UPD_S2_DEINT	32	62	1	0	5	DEINT
34	UPD_S2_DG2_MOD	49	87	1	0	5	DG2 MOD
34	UPD_S2_DOP_TRK	15	29	1	0	5	DOP TRK
34	UPD_S2_IQ_RATIO	36	66	3	0	2	IQ RATIO
34	UPD_S2_I_CODE	40	72	1	0	5	I CODE
34	UPD_S2_I_DFMT	34	64	1	0	5	I DFMT
34	UPD_S2_I_G2INV	42	74	1	0	5	I G2INV
34	UPD_S2_I_SFMT	37	69	1	0	5	I SFMT
34	UPD_S2_POLAR	10	24	1	0	5	POLAR
34	UPD_S2_Q_CODE	41	73	1	0	5	Q CODE
34	UPD_S2_Q_DFMT	35	65	1	0	5	Q DFMT
34	UPD_S2_Q_G2INV	43	75	1	0	5	Q G2INV
34	UPD_S2_Q_SFMT	38	70	1	0	5	Q SFMT
34	UPD_S2_RCVR_CFG	14	28	1	0	5	RCVR CFG
34	UPD_S2_RCVR_COH	50	88	1	0	5	RCVR COH
34	UPD_S2_REF_WD	56	99	1	0	5	REF WD
34	UPD_S2_RF_PT_AZM	7	15	4	+123	2	RF PT AZM
34	UPD_S2_RF_PT_ELV	8	19	4	+123	2	RF PT ELV
34	UPD_S2_SPARE	6	12	3		4	SPARE
34	UPD_S2_SPARE10	46	80	3		4	SPARE 10
34	UPD_S2_SPARE11	47	83	3		4	SPARE 11
34	UPD_S2_SPARE12	55	93	6		4	SPARE 12
34	UPD_S2_SPARE2	13	27	1		4	SPARE2

**Table C-2. Packet Definitions (27 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
34	UPD_S2_SPARE3	18	36	1		4	SPARE 3
34	UPD_S2_SPARE4	19	37	5		4	SPARE 4
34	UPD_S2_SPARE5	26	52	1		4	SPARE 5
34	UPD_S2_SPARE6	27	53	5		4	SPARE 6
34	UPD_S2_SPARE7	33	63	1		4	SPARE 7
34	UPD_S2_SPARE8	44	76	3		4	SPARE 8
34	UPD_S2_SPARE9	45	79	1		4	SPARE 9
34	UPD_S2_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
34	UPD_S2_SRV_CFG	9	23	1	1	5	SRV CFG
34	UPD_S2_SSA_COMB	48	86	1	0	5	SSA COMB
34	UPD_S2_STATUS	11	25	1	0	5	STAUS
34	UPD_S2_SUBGROUP	5	11	1	0	5	SUBGROUP
34	UPD_S2_SUBTYPE	4	10	1	1	5	SUBTYPE
34	UPD_S2_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
34	UPD_S2_VEH_IC	3	8	2	NN	2	VEH IC
35	UPD_RS_ICOUNT	10	19	8	00000 000	2	I COUNT
35	UPD_RS_ILOCK	9	16	3	000	1	I LOCK
35	UPD_RS_I_BER	11	27	4	XEYY	2	I BER
35	UPD_RS_I_CLOCK	7	13	1	0	5	I CLOCK
35	UPD_RS_I_DENSITY	8	14	2	00	1	I DENSITY
35	UPD_RS_I_SYN_MODE	6	12	1	0	5	I SYN MODE
35	UPD_RS_Q_BER	17	46	4	XEYY	2	Q BER
35	UPD_RS_Q_CLOCK	13	32	1	0	5	Q CLOCK
35	UPD_RS_Q_COUNT	16	38	8	00000 000	2	Q COUNT
35	UPD_RS_Q_DENSITY	14	33	2	00	1	Q DENSITY
35	UPD_RS_Q_LOCK	15	35	3	000	1	Q LOCK
35	UPD_RS_Q_SYN_MODE	12	31	1	0	5	Q SYN MODE
35	UPD_RS_REF_WD	19	99	1	0	5	REF WD
35	UPD_RS_SPARE	18	50	49		4	SPARE
35	UPD_RS_SPT_TYPE	1	0	1	2	5	SERVICE TYPE
35	UPD_RS_SUBGROUP	5	11	1	1	5	SUBGROUP
35	UPD_RS_SUBTYPE	4	10	1	1	5	SUBTYPE
35	UPD_RS_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
35	UPD_RS_VEH_IC	3	8	2	NN	2	VEH IC

**Table C-2. Packet Definitions (28 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
36	UPD_K1_AUTO_STAT	40	64	1	0	5	AUTO STAT
36	UPD_K1_CHN_CFG	31	55	1	0	5	CHN CFG
36	UPD_K1_DATA_VALIDITY	12	26	1	0	5	DATA VALIDITY
36	UPD_K1_DG1_CFG	36	60	1	0	5	DG1 CFG
36	UPD_K1_DOP_TRK	15	29	1	0	5	DOP TRK
36	UPD_K1_IQ_RATIO	28	50	3	+20	2	IQ RATIO
36	UPD_K1_I_BER	24	46	1	0	5	I BER
36	UPD_K1_I_BER_DATA	43	71	1	0	5	I BER DATA
36	UPD_K1_I_CODING	32	56	1	0	5	I CODING
36	UPD_K1_I_FORMAT	26	48	1	0	5	I FORMAT
36	UPD_K1_I_G2INV	34	58	1	0	5	I G2INV
36	UPD_K1_I_LOCK	17	31	1	0	5	I LOCK
36	UPD_K1_I_SIG	18	32	5	00000	2	I SIG
36	UPD_K1_I_SYMBOL	29	53	1	0	5	I SYMBOL
36	UPD_K1_I_SYN_LOCK	22	44	1	0	5	I SYN LOCK
36	UPD_K1_I_TYPE	16	30	1	1	5	I TYPE
36	UPD_K1_MODE	38	62	1	0	5	MODE
36	UPD_K1_POLAR	10	24	1	0	5	POLAR
36	UPD_K1_Q_BER	25	47	1	0	5	Q BER
36	UPD_K1_Q_BER_DATA	44	72	1	0	5	Q BER DATA
36	UPD_K1_Q_CODING	33	57	1	0	5	Q CODING
36	UPD_K1_Q_FORMAT	27	49	1	0	5	Q FORMAT
36	UPD_K1_Q_G2INV	35	59	1	0	5	Q G2INV
36	UPD_K1_Q_LOCK	20	38	1	0	5	Q LOCK
36	UPD_K1_Q_SIG	21	39	5	00000	2	Q SIG
36	UPD_K1_Q_SYMBOL	30	54	1	0	5	Q SYMBOL
36	UPD_K1_Q_SYN_LOCK	23	45	1	0	5	Q SYN LOCK
36	UPD_K1_Q_TYPE	19	37	1	1	5	Q TYPE
36	UPD_K1_RCVR_CFG	14	28	1	0	5	RCVR CFG
36	UPD_K1_RCVR_COH	39	63	1	0	5	RCVR COH
36	UPD_K1_REF_WD	46	99	1	0	5	REF WD
36	UPD_K1_RF_PT_AZM	7	15	4	+123	2	RF PT AZM
36	UPD_K1_RF_PT_ELV	8	19	4	+123	2	RF PT ELV
36	UPD_K1_RNG_TRK	37	61	1	0	5	RNG TRK
36	UPD_K1_SPARE	6	12	3		4	SPARE
36	UPD_K1_SPARE2	13	27	1		4	SPARE2

**Table C-2. Packet Definitions (29 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
36	UPD_K1_SPARE3	41	65	3	0	4	SPARE 3
36	UPD_K1_SPARE4	42	68	3	0	4	SPARE 4
36	UPD_K1_SPARE5	45	73	26	0	4	SPARE 5
36	UPD_K1_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
36	UPD_K1_SRV_CFG	9	23	1	1	5	SRV CFG
36	UPD_K1_STATUS	11	25	1	0	5	STAUS
36	UPD_K1_SUBGROUP	5	11	1	0	5	SUBGROUP
36	UPD_K1_SUBTYPE	4	10	1	1	5	SUBTYPE
36	UPD_K1_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
36	UPD_K1_VEH_IC	3	8	2	NN	2	VEH IC
37	UPD_K2_AUTO_STAT	36	60	1	0	5	AUTO STAT
37	UPD_K2_CHN_CFG	31	55	1	0	5	CHN CFG
37	UPD_K2_DATA_VALIDITY	12	26	1	0	5	DATA VALIDITY
37	UPD_K2_DG2_MOD	39	67	1	0	5	DG2 MOD
37	UPD_K2_DOP_TRK	15	29	1	0	5	DOP TRK
37	UPD_K2_IQ_RATIO	28	50	3	+20	2	IQ RATIO
37	UPD_K2_I_BER	24	46	1	0	5	I BER
37	UPD_K2_I_BER_DATA	41	69	1	0	5	I BER DATA
37	UPD_K2_I_CODING	32	56	1	0	5	I CODING
37	UPD_K2_I_FMT_CONV	26	48	1	0	5	I FORMAT CONV
37	UPD_K2_I_G2INV	34	58	1	0	5	I G2INV
37	UPD_K2_I_LOCK	17	31	1	0	5	I LOCK
37	UPD_K2_I_SIG	18	32	5	00000	2	I SIG
37	UPD_K2_I_SYMBOL	29	53	1	0	5	I SYMBOL
37	UPD_K2_I_SYN_LOCK	22	44	1	0	5	I SYN LOCK
37	UPD_K2_I_TYPE	16	30	1	1	5	I TYPE
37	UPD_K2_POLAR	10	24	1	0	5	POLAR
37	UPD_K2_Q_BER	25	47	1	0	5	Q BER
37	UPD_K2_Q_BER_DATA	42	70	1	0	5	Q BER DATA
37	UPD_K2_Q_CODING	33	57	1	0	5	Q CODING
37	UPD_K2_Q_FMT_CONV	27	49	1	0	5	Q FORMAT CONV
37	UPD_K2_Q_G2INV	35	59	1	0	5	Q G2INV
37	UPD_K2_Q_LOCK	20	38	1	0	5	Q LOCK
37	UPD_K2_Q_SIG	21	39	5	0	2	Q SIG
37	UPD_K2_Q_SYMBOL	30	54	1	0	5	Q SYMBOL
37	UPD_K2_Q_SYN_LOCK	23	45	1		5	Q SYN LOCK

**Table C-2. Packet Definitions (30 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
37	UPD_K2_Q_TYPE	19	37	1	1	5	Q TYPE
37	UPD_K2_RCVR_CFG	14	28	1	0	5	RCVR CFG
37	UPD_K2_RCVR_COH	40	68	1	0	5	RCVR_COH
37	UPD_K2_REF_WD	44	99	1	0	5	REF WD
37	UPD_K2_RF_PT_AZM	7	15	4	+123	2	RF PT AZM
37	UPD_K2_RF_PT_ELV	8	19	4	+123	2	RF PT ELV
37	UPD_K2_SPARE	6	12	3		4	SPARE
37	UPD_K2_SPARE2	13	27	1		4	SPARE2
37	UPD_K2_SPARE3	37	61	3		4	SPARE3
37	UPD_K2_SPARE4	38	64	3		4	SPARE4
37	UPD_K2_SPARE5	43	71	28		4	SPARE 5
37	UPD_K2_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
37	UPD_K2_SRV_CFG	9	23	1	1	5	SRV CFG
37	UPD_K2_STATUS	11	25	1	0	5	STAUS
37	UPD_K2_SUBGROUP	5	11	1	0	5	SUBGROUP
37	UPD_K2_SUBTYPE	4	10	1	1	5	SUBTYPE
37	UPD_K2_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
37	UPD_K2_VEH_IC	3	8	2	NN	2	VEH IC
38	UPD_KR_3_BER_S	23	65	4	XEYY	4	3 BER S
38	UPD_KR_3_CLOCK_S	19	51	1	0	4	3 CLOCK S
38	UPD_KR_3_COUNT_S	22	57	8	00000 000	4	3 COUNT S
38	UPD_KR_3_DENSITY_S	20	52	2	0	4	3 DENSITY S
38	UPD_KR_3_LOCK_S	21	54	3	000	4	3 LOCK S
38	UPD_KR_3_SYN_MODE	18	50	1	0	4	3 SYN MODE
38	UPD_KR_ICOUNT	10	19	8	00000 000	2	I COUNT
38	UPD_KR_ILOCK	9	16	3	000	1	I LOCK
38	UPD_KR_I_BER	11	27	4	XEYY	2	I BER
38	UPD_KR_I_CLOCK	7	13	1	0	5	I CLOCK
38	UPD_KR_I_DENSITY	8	14	2	00	1	I DENSITY
38	UPD_KR_I_SYN_MODE	6	12	1	0	5	I SYN MODE
38	UPD_KR_Q_BER	17	46	4	XEYY	2	Q BER
38	UPD_KR_Q_CLOCK	13	32	1	0	5	Q CLOCK
38	UPD_KR_Q_COUNT	16	38	8	00000 000	2	Q COUNT
38	UPD_KR_Q_DENSITY	14	33	2	00	1	Q DENSITY

**Table C-2. Packet Definitions (31 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
38	UPD_KR_Q_LOCK	15	35	3	000	1	Q LOCK
38	UPD_KR_Q_SYN_MODE	12	31	1	0	5	Q SYN MODE
38	UPD_KR_REF_WD	25	99	1	0	5	REF WD
38	UPD_KR_SPARE	24	69	30		4	SPARE
38	UPD_KR_SPT_TYPE	1	0	1	2	5	SERVICE TYPE
38	UPD_KR_SUBGROUP	5	11	1	1	5	SUBGROUP
38	UPD_KR_SUBTYPE	4	10	1	1	5	SUBTYPE
38	UPD_KR_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
38	UPD_KR_VEH_IC	3	8	2	NN	2	VEH IC
39	UPD_MF_CLOCK	11	36	1	0	5	CLOCK
39	UPD_MF_DATA_VALIDITY	4	10	1	0	5	DATA VALIDITY
39	UPD_MF_DENSITY	12	37	2	00	1	DENSITY
39	UPD_MF_EIRP	8	21	4	+123	2	EIRP
39	UPD_MF_FREQ	9	25	10	00000 00000	2	FREQ
39	UPD_MF_REF_WD	14	99	1	0	5	REF WD
39	UPD_MF_RF_PT_AZM	6	13	4		2	RF PT AZM
39	UPD_MF_RF_PT_ELV	7	17	4		2	RF PT ELV
39	UPD_MF_SPARE	5	11	2		4	SPARE
39	UPD_MF_SPARE2	13	39	60		4	SPARE
39	UPD_MF_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
39	UPD_MF_STATUS	10	35	1	0	5	STATUS
39	UPD_MF_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
39	UPD_MF_VEH_IC	3	8	2	NN	2	VEH IC
40	UPD_MR_CHN_CFG	26	49	1	0	5	CHN CFG
40	UPD_MR_CONFIG	19	38	1	1	5	I CONFIG
40	UPD_MR_DATA_VALIDITY	5	12	1	0	5	DATA VALIDITY
40	UPD_MR_DOP_STATUS	11	28	1	0	5	DOP STATUS
40	UPD_MR_IQ_RATIO	16	33	3	+20	2	IQ RATIO
40	UPD_MR_I_BER	24	47	1	0	5	I BER
40	UPD_MR_I_BER_DATA	32	55	1	0	5	I BER DATA
40	UPD_MR_I_FORMAT	14	31	1	0	5	I FORMAT
40	UPD_MR_I_G2INV	30	53	1	0	5	I G2INV
40	UPD_MR_I_SYMBOL	17	36	1	0	5	I SYMBOL
40	UPD_MR_I_SYN_LOCK	22	45	1	0	5	I SYN LOCK

**Table C-2. Packet Definitions (32 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
40	UPD_MR_LOCK	20	39	1	0	5	LOCK
40	UPD_MR_MA_LINK	10	26	2	1	5	MA LINK
40	UPD_MR_MODE	29	52	1	0	5	MODE
40	UPD_MR_Q_BER	25	48	1	0	5	Q BER
40	UPD_MR_Q_BER_DATA	33	56	1	0	5	Q BER DATA
40	UPD_MR_Q_FORMAT	15	32	1	0	5	I FORMAT
40	UPD_MR_Q_G2INV	31	54	1	0	5	Q G2INV
40	UPD_MR_Q_SYMBOL	18	37	1	00000	5	Q SYMBOL
40	UPD_MR_Q_SYN_LOCK	23	46	1		5	Q SYN LOCK
40	UPD_MR_RCVR_CFG	13	30	1		5	RCVR CFG
40	UPD_MR_REF_WD	35	99	1	0	5	REF WD
40	UPD_MR_RF_PT_AZM	8	18	4	+123	2	RF PT AZM
40	UPD_MR_RF_PT_ELV	9	22	4	+123	2	RF PT ELV
40	UPD_MR_RNG_STATUS	12	29	1	0	5	RNG STAUS
40	UPD_MR_SCH_LINK	4	10	2	1	2	SCH LINK
40	UPD_MR_SIGNAL	21	40	5	00000	5	SIGNAL
40	UPD_MR_SPARE	6	13	2		4	SPARE
40	UPD_MR_SPARE2	7	15	3		4	SPARE
40	UPD_MR_SPARE3	28	51	1		4	SPARE
40	UPD_MR_SPARE4	34	57	42		4	SPARE
40	UPD_MR_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
40	UPD_MR_STATUS	27	50	1	0	5	STATUS
40	UPD_MR_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
40	UPD_MR_VEH_IC	3	8	2	NN	2	VEH IC
41	UPD_DQ_I_BER	10	27	4	0000	2	I BER
41	UPD_DQ_I_CLOCK	6	13	1	0	5	I CLOCK
41	UPD_DQ_I_COUNT	9	19	8	00000 000	2	I COUNT
41	UPD_DQ_I_DENSITY	7	14	2	00	2	I DENSITY
41	UPD_DQ_I_LOCK	8	16	3	000	2	I LOCK
41	UPD_DQ_I_SYN_MODE	5	11	1	1	5	I SYN MODE
41	UPD_DQ_Q_BER	16	46	4	XEYY	2	Q BER
41	UPD_DQ_Q_CLOCK	12	32	1	0	5	Q CLOCK
41	UPD_DQ_Q_COUNT	15	38	8	000	2	Q COUNT
41	UPD_DQ_Q_DENSITY	13	33	2	0	2	Q DENSITY
41	UPD_DQ_Q_LOCK	14	35	3	000	2	Q LOCK

**Table C-2. Packet Definitions (33 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
41	UPD_DQ_Q_SYN_MODE	11	31	1	XEYY	5	Q SYN MODE
41	UPD_DQ_REF_WD	18	99	1	0	5	REF WD
41	UPD_DQ_SCH_LINK	4	10	2	1	5	SCH LINK
41	UPD_DQ_SPARE	17	50	49		4	SPARE
41	UPD_DQ_SPT_TYPE	1	0	1	2	5	SERVICE TYPE
41	UPD_DQ_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
41	UPD_DQ_VEH_IC	3	8	2	NN	2	VEH IC
42	UPD_FD_ANT_POLAR	5	11	1	0	5	ANT POLAR
42	UPD_FD_BER_STAT	14	34	1	1	5	BER STAT
42	UPD_FD_BIT_SYNC_LCK	12	32	1	0	5	BIT SYNC LOCK
42	UPD_FD_CHN_LCK	10	30	1	0	5	CHN LCK
42	UPD_FD_CRR_LCK	11	31	1	0	5	CRR LCK
42	UPD_FD_DATA_VALIDITY	15	35	1	0	5	DATA VALIDITY
42	UPD_FD_FREQ	9	20	10	00000 000	2	FREQ
42	UPD_FD_GAIN	8	16	4	0000	1	GAIN
42	UPD_FD_REF_WD	17	99	1	0	5	REF Wd
42	UPD_FD_SPARE	6	12	1		4	SPARE
42	UPD_FD_SPARE2	7	13	3		4	SPARE 2
42	UPD_FD_SPARE3	13	33	1		4	SPARE 3
42	UPD_FD_SPARE4	16	36	63		4	SPARE 4
42	UPD_FD_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
42	UPD_FD_SUBTYPE	4	10	1	0	5	SUBTYPE
42	UPD_FD_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
42	UPD_FD_VEH_IC	3	8	2	NN	2	VEH IC
43	UPD_RD_ANT_POLAR	5	11	1	0	5	ANT POLAR
43	UPD_RD_DATA_VALIDITY	10	30	1	0	5	DATA VALIDITY
43	UPD_RD_EIRP	8	16	4	0000	2	EIRP
43	UPD_RD_FREQ	9	20	10	00000 00000	2	FREQ
43	UPD_RD_REF_WD	12	99	1	0	5	REF WD
43	UPD_RD_SPARE	6	12	1		4	SPARE
43	UPD_RD_SPARE2	7	13	3		4	SPARE 2
43	UPD_RD_SPARE3	11	31	68		4	SPARE3
43	UPD_RD_SPT_TYPE	1	0	1	0	5	SERVICE TYPE
43	UPD_RD_SUBTYPE	4	10	1	0	5	SUBTYPE

**Table C-2. Packet Definitions (34 of 34)**

Type	Mnemonic	Item	Offset	Length	Value	Value Type	Descriptor
43	UPD_RD_SUPIDEN	2	1	7	A1873 MS	2	SUPIDEN
43	UPD_RD_VEH_IC	3	8	2	NN	2	VEH IC

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## **Appendix D. Carry-Out File**

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### **D.1 Carry-Out File Data**

The FOS Analysis Subsystem within the EOC generates carry-out files, in accordance with the FOS Analysis Design Specification (305-CD-047-001) to support routine FOT analysis operations. A Carry-Out File is a standard output file created by the FOS Analysis Subsystem generic output file function in response to an FOT request. The standard carry-out file format provides the means to represent different parameter data in a consistent manner. Created carry-out files are protected and available as ðread-onlyö. Carry-out files can be generated to contain the following data:

- a. AM-1 spacecraft housekeeping data
- b. AM-1 spacecraft health and safety data
- c. AM-1 diagnostic telemetry data
- d. Network Control Center (NCC) User Performance Data (UPD) message data [also known as operations data message (ODM) data]
- e. EDOS Customer Operations and Data Accounting (CODA) message data

Carry-out file size for electronic data transfer may not exceed the 2 GB UNIX file size limit.

### **D.2 Carry-Out File Format and Contents**

The general format and contents of an EOC carry-out file are shown in Table D-1. Carry-out file data is provided in the American Standard Code for Information Interchange (ASCII). Each record in a carry-out file terminates with an ASCII new-line character. Fields within in a record are separated by the vertical bar "|" delimiter. Fields may vary in length up to the maximum size indicated.

#### **NOTE**

A Field is unfilled when value does not exist for the parameter identified.

Carry-out file contents vary depending on mission start and stop times and set of parameters specified in each FOT file generation request. Valid Parameter Mnemonics and Parameter IDs are found in the EOC Project Database (PDB), the operational point of control for AM-1 spacecraft definition files, which are provided and validated through the collective effort of the FOT, the AM-1 spacecraft vendor, and other designated sources.

Each carry-out file includes one File Header, at least one Header Record, and one or more Data Records. A single Header Record is included for each spacecraft parameter addressed in a carry-out file. There may be one or more Data Records associated with each Header Record. Data Records map to the corresponding Header Record through the Parameter ID. Data Records include converted data values and may also include raw data and decoded data. Converted data is presented in the form of engineering unit (EU) converted values or discrete state converted values. A sample carry-out file is shown in Figure D-1.

**Table D-1. Carry-Out File Data Format (1 of 2)**

Item #	Data Item	Data Type	Format / Maximum Size (in Bytes)	Values
--	<b>File Header</b>	--	--	--
H1	Time of First Parameter in string format, YYYY/DDD HH:MM:SS.MMM	String	ASCII 21B	Valid mission times
H2	Total Number of Header Records	16 Bit Integer	ASCII 5B	0 to 65535
--	<b>Start Header Record</b>	--	--	--
H3	Parameter Mnemonic	String	ASCII 20B	Valid Parameter Mnemonic per PDB
H4	FOS Parameter ID	16 Bit Integer	ASCII 6B	Valid Parameter ID per EOC Data Base
H5	AM-1 PDB Parameter ID	16 Bit Integer	ASCII 5B	Valid Parameter ID per AM-1 PDB
H6	Data Type defined by: R = Real I = Integer S = String (e.g. Discrete State String)	Character	ASCII 1B	R, I or S
H7	Start and Stop Time of Database for which this PID is invalid. String format as in H1 with hyphen separator <sup>1</sup> . This parameter identifies the time period of any data dropouts in the carry out file due to an invalid or nonexistent PID entry in the database. This field is unfilled when a valid database entry exists for this PID for the entire time period covered by the dataset.	String	43B	Valid Mission Times
--	<b>End Header Record [Repeat Header Record for each Parameter]</b>			--
--	<b>Start Data Record</b>	--	--	--
D1	Time of Parameter, stated as offset time from Item H1 the start time of the first parameter	Real 8 Byte Floating Point Number	ASCII 16B	Offset Time in Seconds
D2	FOS Parameter ID	16 Bit Integer	ASCII 6B	Valid Parameter ID per EOC Data Base
D3	AM-1 PDB Parameter ID	16 Bit Integer	ASCII 5B	Valid Parameter ID per AM-1 PDB
D4	Raw value <sup>1</sup> (Raw values are not reported for ground telemetry.)	Integer	ASCII 10B	All
D5	Converted value	Variable per Item H6	ASCII 16B	Variable per Data Type
D6	Decoded value <sup>1</sup>	32 Bit Integer	ASCII 10B	All

**Table D-1. Carry-Out File Data Format (2 of 2)**

Item #	Data Item	Data Type	Format / Maximum Size (in Bytes)	Values
D7	Status Word, containing data for status flags arranged as bits in a 32 Bit Integer where Bit 0 is the Least Significant Bit.  Bit 0 RedHi Bit 1 RedLow Bit 2 YellowHi Bit 3 YellowLow Bit 4 Delta Limit Bit 5 Rail Limit Bit 6 Quality Bit 7 Conversion Error Bits 8-31 Reserved for Future Use	32 Bit Integer	ASCII 10B	All
--	<b>End Data Record (End Line) [Repeat D1 - D7 until End of File]</b>			

**Sample Record**

**Sample Record Data Description**

1999/234 19:23:43.024	; time of first parameter
3	; total number of header records
MPSEMISA1 123 23IR	; first header record
MPSEMISA2 124 24IR	; second header record
MPSEPMONOUT2 13456 3456	; last header record. Rest of file is data.
0.0 123 23 029 23.5676  0	; data record for FOS Parameter ID 123, no decoded value
0.001 124 24 099 83.5676  4	; data record for FOS Parameter ID 124, no decoded value
0.052 123 23 029 23.5676  0	; data record for FOS Parameter ID 123, no decoded value
0.055 124 24 089 80.5676  4	; data record for FOS Parameter ID 124, no decoded value
1.000 13456 3456 4294967295  -1 0	; data record for FOS Parameter ID 13456, no converted value
.....etc.....	

**Figure D-1. Sample Carry-Out File Record**

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## Appendix E. Timeline Symbols

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The table below documents symbols utilized on the Timeline to represent orbital events.

### *Discrete Orbital Events*

	APOGEE	Apogee Event
	CERES_Beta_Angle_Danger_Zone_End	CERES Beta Angle Danger End Event
	CERES_Beta_Angle_Danger_Zone_Start	CERES Beta Angle Danger Start Event
	CERES_Elev_Angle_Danger_Zone_End	CERES Elevation Angle Danger End Event
	CERES_Elev_Angle_Danger_Zone_Start	CERES Elevation Angle Danger Start Event
	CERES_Footprint_Tgt_Vis_Entry_Baltimore_City	CERES Target Visibility Entry for Baltimore Event
	CERES_Footprint_Tgt_Vis_Exit_Baltimore_City	CERES Target Visibility Exit for Baltimore Event
	CERES_Tgt_Closest_Approach_To_Nadir_Baltimore_City	CERES Tgt Closest Approach To Nadir To Baltimore Event
	Delta-V_Orbit_Maneuver	Delta-V Orbit Maneuver Event
	Ground_Contact_End_BMD	Direct Access Antenna Ground Contact End - WOTS
	Ground_Contact_End_CAN	Direct Access Antenna Ground Contact End - SGS

	Ground_Contact_End_GDS	Direct Access Antenna Ground Contact End - AGS
	Ground_Contact_Start_BMD	Direct Access Antenna Ground Contact Start - WOTS
	Ground_Contact_Start_CAN	Direct Access Antenna Ground Contact Start - SGS
	Ground_Contact_Start_GDS	Direct Access Antenna Ground Contact Start - AGS
	HGA-TDRS_AOS_TD1	HGA-to-TDRS Satellite 1 Acquisition of Signal Event
	HGA-TDRS_AOS_TD3	HGA-to-TDRS Satellite 3 Acquisition of Signal Event
	HGA-TDRS_AOS_TD4	HGA-to-TDRS Satellite 4 Acquisition of Signal Event
	HGA-TDRS_AOS_TD5	HGA-to-TDRS Satellite 5 Acquisition of Signal Event
	HGA-TDRS_AOS_TD6	HGA-to-TDRS Satellite 6 Acquisition of Signal Event
	HGA-TDRS_AOS_TD7	HGA-to-TDRS Satellite 7 Acquisition of Signal Event
	HGA-TDRS_LOS_TD1	HGA-to-TDRS Satellite 1 Loss of Signal Event
	HGA-TDRS_LOS_TD3	HGA-to-TDRS Satellite 3 Loss of Signal Event
	HGA-TDRS_LOS_TD4	HGA-to-TDRS Satellite 4 Loss of Signal Event
	HGA-TDRS_LOS_TD5	HGA-to-TDRS Satellite 5 Loss of Signal Event

	HGA-TDRS_LOS_TD6	HGA-to-TDRS Satellite 6 Loss of Signal Event
	HGA-TDRS_LOS_TD7	HGA-to-TDRS Satellite 7 Loss of Signal Event
	MISR_Footprint_Tgt_Vis_Entry_London_City	MISR Target Visibility Entry for London Event
	MISR_Footprint_Tgt_Vis_Exit_London_City	MISR Target Visibility Exit for London
	MISR_Jupiter_Entry	Planet/Star Field of View MISR Jupiter Entry Event
	MISR_Jupiter_Exit	Planet/Star Field of View MISR Jupiter Exit Event
	MISR_Mars_Entry	Planet/Star Field of View MISR Mars Entry Event
	MISR_Mars_Exit	Planet/Star Field of View MISR Mars Exit Event
	MISR_Mercury_Entry	Planet/Star Field of View MISR Mercury Entry Event
	MISR_Mercury_Exit	Planet/Star Field of View MISR Mercury Exit Event
	MISR_Moon_Entry	Sun/Moon Field of View MISR Moon Entry Event
	MISR_Moon_Exit	Sun/Moon Field of View MISR Moon Entry Exit
	MISR_Neptune_Entry	Planet/Star Field of View MISR Neptune Entry Event
	MISR_Neptune_Exit	Planet/Star Field of View MISR Neptune Exit Event

	MISR_Pluto_Entry	Planet/Star Field of View MISR Pluto Entry Event
	MISR_Pluto_Exit	Planet/Star Field of View MISR Pluto Exit Event
	MISR_Saturn_Entry	Planet/Star Field of View MISR Saturn Entry Event
	MISR_Saturn_Exit	Planet/Star Field of View MISR Saturn Exit Event
	MISR_Star_Entry	Planet/Star Field of View MISR Star Entry Event
	MISR_Star_Exit	Planet/Star Field of View MISR Star Exit Event
	MISR_Sun_Entry	Sun/Moon Field of View MISR Sun Entry Event
	MISR_Sun_Exit	Sun/Moon Field of View MISR Sun Exit Event
	MISR_Tgt_Closest_Approach_To_Nadir_London_City	MISR Tgt Closest Approach To Nadir To London Event
	MISR_Uranus_Entry	Planet/Star Field of View MISR Uranus Entry Event
	MISR_Uranus_Exit	Planet/Star Field of View MISR Uranus Exit Event
	MISR_Venus_Entry	Planet/Star Field of View MISR Venus Entry Event
	MISR_Venus_Exit	Planet/Star Field of View MISR Venus Exit Event
	MISR1_LOS_Term_Crossing_to_Day	MISR Camera 1 Loss of Signal Terminator Crossing-to-Day Event

	MISR1_LOS_Term_Crossing_to_Nite	MISR Camera 1 Loss of Signal Terminator Crossing-to-Night Event
	MISR2_LOS_Term_Crossing_to_Day	MISR Camera 2 Loss of Signal Terminator Crossing-to-Day Event
	MISR2_LOS_Term_Crossing_to_Nite	MISR Camera 2 Loss of Signal Terminator Crossing-to-Night Event
	MISR3_LOS_Term_Crossing_to_Day	MISR Camera 3 Loss of Signal Terminator Crossing-to-Day Event
	MISR3_LOS_Term_Crossing_to_Nite	MISR Camera 3 Loss of Signal Terminator Crossing-to-Night Event
	MISR4_LOS_Term_Crossing_to_Day	MISR Camera 4 Loss of Signal Terminator Crossing-to-Day Event
	MISR4_LOS_Term_Crossing_to_Nite	MISR Camera 4 Loss of Signal Terminator Crossing-to-Night Event
	MISR5_LOS_Term_Crossing_to_Day	MISR Camera 5 Loss of Signal Terminator Crossing-to-Day Event
	MISR5_LOS_Term_Crossing_to_Nite	MISR Camera 5 Loss of Signal Terminator Crossing-to-Night Event
	MISR6_LOS_Term_Crossing_to_Day	MISR Camera 6 Loss of Signal Terminator Crossing-to-Day Event
	MISR6_LOS_Term_Crossing_to_Nite	MISR Camera 6 Loss of Signal Terminator Crossing-to-Night Event
	MISR7_LOS_Term_Crossing_to_Day	MISR Camera 7 Loss of Signal Terminator Crossing-to-Day Event
	MISR7_LOS_Term_Crossing_to_Nite	MISR Camera 7 Loss of Signal Terminator Crossing-to-Night Event
	MISR8_LOS_Term_Crossing_to_Day	MISR Camera 8 Loss of Signal Terminator Crossing-to-Day Event

	MISR8_LOS_Term_Crossing_to_Nite	MISR Camera 8 Loss of Signal Terminator Crossing-to-Night Event
	MISR9_LOS_Term_Crossing_to_Day	MISR Camera 9 Loss of Signal Terminator Crossing-to-Day Event
	MISR9_LOS_Term_Crossing_to_Nite	MISR Camera 9 Loss of Signal Terminator Crossing-to-Night Event
	MODIS_Footprint_Tgt_Vis_Entry_Paris_City	MODIS Target Visibility Entry for Paris Event
	MODIS_Footprint_Tgt_Vis_Exit_Paris_City	MODIS Target Visibility Exit for Paris Event
	MODIS_Jupiter_Entry	Planet/Star Field of View MODIS Jupiter Entry Event
	MODIS_Jupiter_Exit	Planet/Star Field of View MODIS Jupiter Exit Event
	MODIS_LOS_Term_Crossing_to_Day	MODIS Loss of Signal Terminator Crossing-to-Day Event
	MODIS_LOS_Term_Crossing_to_Nite	MODIS Loss of Signal Terminator Crossing-to-Night Event
	MODIS_Mars_Entry	Planet/Star Field of View MODIS Mars Entry Event
	MODIS_Mars_Exit	Planet/Star Field of View MODIS Mars Exit Event
	MODIS_Mercury_Entry	Planet/Star Field of View MODIS Mercury Entry Event
	MODIS_Mercury_Exit	Planet/Star Field of View MODIS Mercury Exit Event
	MODIS_Moon_Entry	Sun/Moon Field of View MODIS Moon Entry Event

	MODIS_Moon_Exit	Sun/Moon Field of View MODIS Moon Entry Exit Event
	MODIS_Neptune_Entry	Planet/Star Field of View MODIS Neptune Entry Event
	MODIS_Neptune_Exit	Planet/Star Field of View MODIS Neptune Exit Event
	MODIS_Pluto_Entry	Planet/Star Field of View MODIS Pluto Entry Event
	MODIS_Pluto_Exit	Planet/Star Field of View MODIS Pluto Exit Event
	MODIS_Saturn_Entry	Planet/Star Field of View MODIS Saturn Entry Event
	MODIS_Saturn_Exit	Planet/Star Field of View MODIS Saturn Exit Event
	MODIS_Star_Entry	Planet/Star Field of View MODIS Star Entry Event
	MODIS_Star_Exit	Planet/Star Field of View MODIS Star Exit Event
	MODIS_Sun_Entry	Sun/Moon Field of View MODIS Sun Entry Event
	MODIS_Sun_Exit	Sun/Moon Field of View MODIS Sun Exit Event
	MODIS_Target_FOV_Entry_SITEA	MODIS Target Field Of View Entry Event for SITE A
	MODIS_Target_FOV_Entry_SITEB	MODIS Target Field Of View Entry Event for SITE B
	MODIS_Target_FOV_Entry_SITEC	MODIS Target Field Of View Entry Event for SITE C

	MODIS_Target_FOV_Entry_SITED	MODIS Target Field Of View Entry Event for SITE D
	MODIS_Target_FOV_Entry_SITEE	MODIS Target Field Of View Entry Event for SITE E
	MODIS_Target_FOV_Exit_SITEA	MODIS Target Field Of View Exit Event for SITE A
	MODIS_Target_FOV_Exit_SITEB	MODIS Target Field Of View Exit Event for SITE B
	MODIS_Target_FOV_Exit_SITEC	MODIS Target Field Of View Exit Event for SITE C
	MODIS_Target_FOV_Exit_SITED	MODIS Target Field Of View Exit Event for SITE D
	MODIS_Target_FOV_Exit_SITEE	MODIS Target Field Of View Exit Event for SITE E
	MODIS_Tgt_Closest_Approach_To_Nadir_Paris_City	MODIS Tgt Closest Approach To Nadir To Paris Event
	MODIS_Uranus_Entry	Planet/Star Field of View MODIS Uranus Entry Event
	MODIS_Uranus_Exit	Planet/Star Field of View MODIS Uranus Exit Event
	MODIS_Venus_Entry	Planet/Star Field of View MODIS Venus Entry Event
	MODIS_Venus_Exit	Planet/Star Field of View MODIS Venus Exit Event
	MOPITT_Footprint_Tgt_Vis_Entry_Hawaii_State	MOPITT Target Visibility Entry for Hawaii Event
	MOPITT_Footprint_Tgt_Vis_Exit_Hawaii_State	MOPITT Target Visibility Exit for Hawaii Event

	MOPITT_Tgt_Closest_Approach_To_Nadir_Hawaii_State	MOPITT Tgt Closest Approach To Nadir To Hawaii Event
	Nadir_Term_Crossing_to_Day	Nadir Terminator Crossing from Night to Day Event
	Nadir_Term_Crossing_to_Nite	Nadir Terminator Crossing from Day to Night Event
	Node_Ascending	Ascending Node Time of Crossing and Longitude Event
	Node_Descending	Descending Node Time of Crossing and Longitude Event
	OMNI-GND_AOS_BMD	Omni-to-Ground Station Bermuda Acquisition of Signal Event
	OMNI-GND_AOS_CAN	Omni-to-Ground Station Canberra Acquisition of Signal Event
	OMNI-GND_AOS_GDS	Omni-to-Ground Station Goldstone Acquisition of Signal Event
	OMNI-GND_LOS_BMD	Omni-to-Ground Station Bermuda Loss of Signal Event
	OMNI-GND_LOS_CAN	Omni-to-Ground Station Canberra Loss of Signal Event
	OMNI-GND_LOS_GDS	Omni-to-Ground Station Goldstone Loss of Signal Event
	OMNI-TDRS_AOS_TD1	Omni-to-TDRS Satellite 1 Acquisition of Signal Event
	OMNI-TDRS_AOS_TD3	Omni-to-TDRS Satellite 3 Acquisition of Signal Event
	OMNI-TDRS_AOS_TD4	Omni-to-TDRS Satellite 4 Acquisition of Signal Event

	OMNI-TDRS_AOS_TD5	Omni-to-TDRS Satellite 5 Acquisition of Signal Event
	OMNI-TDRS_AOS_TD6	Omni-to-TDRS Satellite 6 Acquisition of Signal Event
	OMNI-TDRS_AOS_TD7	Omni-to-TDRS Satellite 7 Acquisition of Signal Event
	OMNI-TDRS_LOS_TD1	Omni-to-TDRS Satellite 1 Loss of Signal Event
	OMNI-TDRS_LOS_TD3	Omni-to-TDRS Satellite 3 Loss of Signal Event
	OMNI-TDRS_LOS_TD4	Omni-to-TDRS Satellite 4 Loss of Signal Event
	OMNI-TDRS_LOS_TD5	Omni-to-TDRS Satellite 5 Loss of Signal Event
	OMNI-TDRS_LOS_TD6	Omni-to-TDRS Satellite 6 Loss of Signal Event
	OMNI-TDRS_LOS_TD7	Omni-to-TDRS Satellite 7 Loss of Signal Event
	Orbit_Start	Orbit Start Event
	PERIGEE	Perigee Event
	S/C_Day/Night	Sunset Event
	S/C_Maximum_Latitude	Maximum Latitude Event
	S/C_Minimum_Latitude	Minimum Latitude Event

	S/C_Night/Day	Sunrise Event
	S/C_Noon	Noon Event
	SAA_Entry	South Atlantic Anomaly Entry Event
	SAA_Exit	South Atlantic Anomaly Exit Event
	Solar_Eclipse_Entry	Solar Eclipse Entry Event
	Solar_Eclipse_Exit	Solar Eclipse Exit Event
	VA_Belt_Entry	Van Allen Belt entrance Event
	VA_Belt_Exit	Van Allen Belt Exit Event
	X-Band_Interference_End_DSN16	X-Band Interference End for dsn16 Event
	X-Band_Interference_End_DSN46	X-Band Interference End for dsn46 Event
	X-Band_Interference_End_DSN66	X-Band Interference End for dsn66 Event
	X-Band_Interference_Start_DSN16	X-Band Interference Start for dsn16 Event
	X-Band_Interference_Start_DSN46	X-Band Interference Start for dsn46 Event
	X-Band_Interference_Start_DSN66	X-Band Interference Start for dsn66 Event

## ***Duration Orbital Events***

CERES_Beta_Angle_Danger_Zone	Ceres Beta Angle Danger Zone Event
CERES_Elev_Angle_Danger_Zone	CERES Elevation Angle Danger Event
CERES_Footprint_Tgt_Vis_Duration_Event_Baltimore_City	CERES Target Visibility Exit for Baltimore Duration Event
Ground_Contact_In_View_BMD	Direct Access Antenna Ground Contact in View - WOTS
Ground_Contact_In_View_CAN	Direct Access Antenna Ground Contact in View - SGS
Ground_Contact_In_View_GDS	Direct Access Antenna Ground Contact in View - AGS
HGA-TDRS_In_View_TD1	HGA-TDRS In View TD1 Event
HGA-TDRS_In_View_TD3	HGA-TDRS In View TD3 Event
HGA-TDRS_In_View_TD4	HGA-TDRS In View TD4 Event
HGA-TDRS_In_View_TD5	HGA-TDRS In View TD5 Event
HGA-TDRS_In_View_TD6	HGA-TDRS In View TD6 Event
HGA-TDRS_In_View_TD7	HGA-TDRS In View TD7 Event
MISR_Footprint_Tgt_Vis_Duration_Event_London_City	MISR Visibility Target for London Duration Event
MISR_Moon_In_View	Sun/Moon Field of View MISR Moon in View Event
MISR_Sun_In_View	Sun/Moon Field of View MISR Sun in View Event
MODIS_Footprint_Tgt_Vis_Duration_Event_Paris_City	MODIS Target Visibility for Paris Duration Event
MODIS_Moon_In_View	Sun/Moon Field of View MODIS Moon in View Event
MODIS_Sun_In_View	Sun/Moon Field of View MODIS Sun in View Event
MODIS_Target_FOV_In_View_SITEA	MODIS Target Field Of View in View Event for SITE A
MODIS_Target_FOV_In_View_SITEB	MODIS Target Field Of View in View Event for SITE B
MODIS_Target_FOV_In_View_SITEC	MODIS Target Field Of View in View Event for SITE C
MODIS_Target_FOV_In_View_SITED	MODIS Target Field Of View in View Event for SITE D
MODIS_Target_FOV_In_View_SITEE	MODIS Target Field Of View in View Event for SITE E
MOPITT_Footprint_Tgt_Vis_Duration_Event_Hawaii_State	MOPITT Visiility Target for Hawaii Duration Event
OMNI-GND_In_View_BMD	OMNI-GND View WOTS Event
OMNI-GND_In_View_CAN	OMNI-GND View SGS Event
OMNI-GND_In_View_GDS	OMNI-GND View AGS Event
OMNI-TDRS_In_View_TD1	OMNI-TDRS In View TD1 Event
OMNI-TDRS_In_View_TD3	OMNI-TDRS In View TD3 Event

OMNI-TDRS_In_View_TD4	OMNI-TDRS In View TD4 Event
OMNI-TDRS_In_View_TD5	OMNI-TDRS In View TD5 Event
OMNI-TDRS_In_View_TD6	OMNI-TDRS In View TD6 Event
OMNI-TDRS_In_View_TD7	OMNI-TDRS In View TD7 Event
S/C_Day	Day Event
S/C_Night	Night Event
SAA_In_Anomaly	South Atlantic in Anomaly Event
Solar_Eclipse_In_Eclipse	Solar Eclipse Event
VA_Belt_In_Belt	Van Allen Belt In Belt Event
X-Band_Interference_Duration_DSN16	X-Band Interference DSN16 Event
X-Band_Interference_Duration_DSN46	X-Band Interference DSN46 Event
X-Band_Interference_Duration_DSN66	X-Band Interference DSN66 Event

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## Abbreviations and Acronyms

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ACK	Acknowledge
AGS	ASTER Ground System
ANA	Analysis
AOS	Acquisition of Signal
APID	Application ID
ASCII	American Standard Code for Information Interchange
AST	ASTER Science Team
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer (formerly ITIR)
ATC	Absolute Time Command
BAP	Baseline Activity Profile
CAC	Command Activity Controller
CCB	Configuration Control Board
CCW	Command Control Window
CCSDS	Consultative Committee for Space Data Systems
C&DH	Command and Data Handling
C&T	Command and Telemetry
CDB	Command Data Block
CDE	Common Data Environment
CDRL	Contract Data Requirement List
CERES	Clouds and Earth's Radiant Energy System
CEV	Command Execution Verification
CI	Configuration Item
CLCW	Command Link Control Word
CLTU	Command Link Transmission Unit
CM	Configuration Management
CMD	Command
CMS	Command Management System
CODA	Customer Operations Data Accounting
COM	Communication
COP	Command Operation Procedure
COTS	Commercial Off-The-Shelf
CRC	Cyclic Redundancy Check

CSCI	Computer Software Configuration Item
CSMS	Communications and System Management Segment
CSR	Consent-to-SHIP Review
CSS	Communications Subsystem (CSMS)
CTIU	Command and Telemetry Interface Unit
Ctrl	Control
DAAC	Distributed Active Archive Center
DAR	Data Acquisition Request
DAS	Detailed Activity Schedule
DBA	Database Administrator
DBMS	Database Management System
DCN	Document Change Notice
DDD	Day, three digit format
DEC	Digital Equipment Corporation
DFCD	Data Format Control Document
DID	Data Item Description
DMS	Data Management Subsystem
DN	Data Number
DSS	Decision Support System
EAS	Electrical Accommodation Subsystem
ECL	ECS Command Language
ECOM	EOS Communications
ECS	EOSDIS Core System
EDOS	EOS Data and Operations System
EDU	EDOC Data Unit
EGS	EOS Ground System
EOC	EOS Operations Center
EOS	Earth Observing System
EOSDIS	Earth Observing System Data and Information System
ETS	EOSDIS Test System
EU	Engineering Unit
FARM	Frame Acceptance and Reporting Mechanism
FDD	Flight Dynamics Division
FDF	Flight Dynamics Facility
FIFO	First In - First Out
FOP	Frame Operation Procedure

FOS	Flight Operations Segment (ECS)
FOT	Flight Operations Team
FSE	Flight Segment Engineer
FSW	Flight software
FUI	FOS User Interface
GCM	Ground Control Message
GCMR	Ground Control Message Request
GN&C	Guidance Navigation and Control
G/S	Ground System
GSFC	Goddard Space Flight Center
GUI	Graphical User Interface
HGA	High gain antenna
HH	Hours, two digit format
HK	Housekeeping
HP	Hewlett Packard
HS	Health and Safety
I&T	Integration and Test
ICC	Instrument Control Center
ICD	Interface Control Document
ID	Identification
IOT	Instrument Operations Team
IP	International Partners
IRD	Interface Requirements Document
IS	Ingest Subsystem
IST	Instrument Support Toolkit
IWG	Investigator Working Group
K	Kilo
KFTP	Kerberos File Transfer Protocol
KSA	Ku-band Single Access
LAN	Local Area Network
LAT	Local Area Transport
LSM	Local System Manager
LTIP	Long Term Instrument Plan
LTSP	Long Term Science Plan
MA	Multiple Access
MB	Megabyte

MDT	Mean Down Time
MH	Message Handler
MIS	Management Information System
MISR	Multi-Angle Imaging SpectroRadiometer
MM	Minutes, two digit format
M&O	Maintenance and Operations
MODIS	Moderate Resolution Imaging Spectrometer
MOPITT	Measurements of Pollution in the Troposphere
MP	Microprocessor
MSS	Management and Subsystem (part of CSMS)
MTBF	Mean Time Between Failure
MTBM	Mean Time Between Maintenance
MTTR	Mean Time To Repair
mwm	Motiff window manager
NCC	Network Control Center
OA	Operations Agreement
OASIS	Operations and Science Instrument Support
OMT	Object Model Technique
ODS	One Day Schedule
ODT	Operational Data Tapes
OOD	Object Oriented Design
PA	Performance Assurance
PACS	Polar Acquisition and Command Subsystem
PALS	Procedure Automation Language Shell
PAS	Planning and Scheduling
PDB	Project Data Base
PI	Principal Investigator
PI/TL	Principal Investigator/Team Leader
PLOP	Physical Layer Operation Procedure
PN	Pseudo-Noise
Q/A	Quality/Accounting
RAID	Redundant Array of Inexpensive Disks
RDD	Return Data Delay
RMA	Reliability, Maintainability, Availability
RMS	Resource Management Subsystem
RT	Remote Terminal

RTie	RTworks Inference Engine
RTS	Relative Time Command Sequence
RZS	Range Zero Set
SB	Standby
S/C	Spacecraft
SCC	Spacecraft Controls Computer
SCF	Science Computing Facility
SDN	Schedule Delete Notification
SDPS	Science Data Processing Segment
SDR	Schedule Delete Request
SDVF	Sensor Data Validation Facility
SFE	Science Formatting Equipment
SMC	System Monitoring and Coordination
SN	Space Network
SRE	State Recognition Engine
SRM	Schedule Result Message
SS	Seconds, two digit format
SSA	S-band Single Access
SSIM	Spacecraft Simulator
SSR	Solid State Recorder
SSST	Solid State Star Tracker
STE	State Transition Engine
STS	Short Term Schedule
STGT	Second TDRSS Ground Terminal
STOL	System Test and Operations Language
SW	Software
SYS	System
TD	Target Day
TDRS	Tracking and Data Relay Satellite
TDRSS	Tracking and Data Relay Satellite System
TGT	TDRS Ground Terminal
TLM	Telemetry
TONS	TDRSS On-board Navigation System
TOO	Target Of Opportunity
TPOCC	Transportable Payload Operations Control Center
TRMM	Tropical Rainfall Measuring Mission

TSTOL	TRMM System Test and Operations Language
TTM	Time Transfer Message
UDP	User Datagram Protocol
UPD	User Performance Data
URL	Universal Resource Locator
USCCS	User Spacecraft Clock Calibration System
USM	User Schedule Message
UTC	Universal Time Coordinated
VDD	Version Description Document
WAN	Wide Area Network
WKS	Workstation
WSGT	White Sands Ground Terminal
YYYY	Year, four digit format

# Glossary

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Activity	A specified amount of scheduled work that has a defined start date, takes a specific amount of time to complete, and comprises definable tasks.
Activity Component	An activity component is a single item that can be placed into an activity definition. Any one of the following items can be an activity component: an ATC command, an ECL command procedure, a mode transition, an ECL directive, or another activity definition.
Activity Definition	An activity definition is a collection of activity components containing default scheduling information and modified parameter values. Each activity definition is associated with a single resource and can be used to perform one or more spacecraft functions. Activity definitions can include ATC commands, ECL directives, ECL command procedures, and other activity definitions. In order for the components in an activity definition to appear on an open plan, the activity definition must be scheduled using one of the Planning and Scheduling subsystem scheduling tools.
Activity Level Constraint Checking	Activity level constraint checking refers to the constraint checks that are performed when an activity definition is scheduled and again when an ATC load is generated. Activity level constraint checking attempts to determine if scheduling an activity definition will violate any constraints that have been defined.
Activity Type	Activity definitions that are created can have one of the following activity types: standard, TDRSS contact, ground contact, slew, or uplink. The allowable activity types for an activity definition are based on the activity definition's associated resource. Most activity definitions are of the standard type.
Analysis	Technical or mathematical evaluation based on calculation, interpolation, or other analytical methods. Analysis involves the processing of accumulated data obtained from other verification methods.
Annotation	Comments associated with a scheduled activity.

ATC Command	An Absolute Time Command is an individual spacecraft command as defined in the database. ATC commands can be scheduled as part of an activity definition or individually. Many ATC commands have parameter values that can be changed when creating an activity definition and again when scheduling the command.
ATC Load	An ATC load is a collection of ATC commands scheduled for up-link to the spacecraft.
Attitude Data	Data that represent spacecraft orientation and onboard pointing information. Attitude data includes: <ul style="list-style-type: none"> <li>• Attitude sensor data used to determine the pointing of the spacecraft axes, calibration and alignment data, Euler angles or quaternions, rates and biases, and associated parameters.</li> <li>• Attitude generated onboard in quaternion or Euler angle form.</li> <li>• Refined and routine production data related to the accuracy or knowledge of the attitude.</li> </ul>
Availability	A measure of the degree to which an item is in an operable and committable state at the start of a "mission" (a requirement to perform its function) when the "mission" is called for an unknown (random) time. (Mathematically, operational availability is defined as the mean time between failures divided by the sum of the mean time between failures and the mean down time [before restoration of function].
BAP Definition	A Baseline Activity Profile (BAP) definition is a collection of activity definitions containing default scheduling information, a frequency, and parameter values. BAP definitions are created in order to schedule activity definitions on an open plan repeatedly over time starting at some specified point in time.
BAP Frequency	The frequency to be used when scheduling the activity definitions contained within a BAP definition. BAP frequency can be entered in any of the following units: minutes, hours, days, weeks, orbits, events, or day of the week.
Baseline Activity Profile	A schedule of activities for a target week corresponding to normal instrument operations constructed by integrating long term plans (i.e., LTSP, LTIP, and long term spacecraft operations plan).
Batch Scheduling	Batch scheduling is a scheduling mode used to schedule multiple communication contacts on an open plan over a specified time interval. The communication contact algorithm is used in order to determine where the communication contacts should be scheduled on the plan.

Build	An assemblage of threads to produce a gradual buildup of system capabilities.
Calibration	The collection of data required to perform calibration of the instrument science data, instrument engineering data, and the spacecraft engineering data. It includes pre-flight calibration measurements, in-flight calibrator measurements, calibration equation coefficients derived from calibration software routines, and ground truth data that are to be used in the data calibration processing routine.
Child Activity	A child activity is an activity contained within a complex activity (parent) definition.
Command	Instruction for action to be carried out by a space-based instrument or spacecraft.
Command Level Constraint Checking	Command level constraint checking refers to the constraint checks that are performed on the individual ATC commands contained within an ATC load. This level of constraint checking will check for things like command sequencing and relative spacing between related commands.
Command Parameter	A command parameter is a value associated with an ATC command defined within the database. Each command parameter has a type (integer, float, etc.) and a value that is either fixed or modifiable. Modifiable parameters can be modified at the time of activity (or BAP) definition and again when the activity (or BAP) definition is scheduled.
Communication Activity	A communication activity is an activity definition that is associated with a communications resource.
Communication Contact	A communication contact is a complex communication activity definition associated with the main communications resource that has been scheduled on an open plan. This complex communication activity definition has as components uplink, downlink, and slew activities. These are also scheduled on their associated resources on the same plan over the same time interval as the complex communication activity.
Complex Activity	A complex activity is an activity definition containing one or more activity definitions among its components. There is a parent
Constraint	A constraint is a rule that specifies an association between two resources. Each end of the association can be defined in terms of an activity definition, mode, or orbital event type. An example of a constraint would be a rule specifying that an instrument in a certain mode should not occur during the time that the spacecraft is in science mode.

Contact Algorithm	The contact algorithm is used in batch scheduling mode to optimize the scheduling of communication contacts according to the contact algorithm parameters. The algorithm generates the schedule that best fits the parameters values. The values and weight (priority) of these parameters are user configured.
Contact Algorithm Parameters	The parameters that are used by the contact algorithm when communication contacts are scheduled in batch scheduling mode. The algorithm parameters are such as: the number of contacts per orbit, the duration of each contact, and the separation between contacts.
Contact Scheduling	Contact scheduling is the process of scheduling communication contacts either in batch scheduling mode or as individual communication contacts.
DAS	A Detailed Activity Schedule (DAS) consists of a portion of the Master Plan along with the corresponding ATC load and Ground Schedule.
Default Parameter Value	A default parameter value is the value associated with a parameter contained within an ATC command or ECL command procedure used in a scheduled activity when the activity definition is scheduled without modifying the parameter's value. Default parameter values are contained in the database.
Default Scheduling Information	Default scheduling information refers to the default start and stop time information that is entered when creating an activity or BAP definition. Default start and stop times will be used whenever an activity or BAP definition is scheduled and no new start and stop times have been entered.
Detailed Activity Schedules	The schedule for a spacecraft and instruments which covers up to a 10 day period and is generated/updated daily based on the instrument activity listing for each of the instruments on the respective spacecraft. For a spacecraft and instrument schedule the spacecraft subsystem activity specifications needed for routine spacecraft maintenance and/or for supporting instruments activities are incorporated in the detailed activity schedule.
Direct Broadcast	Continuous down-link transmission of selected real-time data over a broad area (non-specific users).
Downlink Activity	A downlink activity is a communication activity of type TDRSS or ground contact scheduled on a downlink resource on an open plan.
ECL	ECL refers to the EOC Command Language.

ECL Command	An ECL command is a spacecraft command defined in the database that can be placed into an activity definition. The primary difference between ATC commands and ECL commands is that scheduled ECL commands are placed into the ground schedule instead of the ATC load at load generation time.
ECL Command Procedure	A collection of ECL directives used to perform one or more spacecraft functions. ECL command procedures provide the capability to perform functions such as: issuing spacecraft commands, displaying telemetry pages, defining telemetry limits, and defining logical constructs for conditional and iterative execution of directives.
ECL Directive	An ECL directive is a keyword recognized by the ECL command language parser that can be placed into a ECL command procedure.
EOS Data And Operations System (EDOS) Production Data Set	Data sets generated by EDOS using raw instrument or spacecraft packets with space-to-ground transmission artifacts removed, in time order, with duplicate data removed, and with quality/ accounting (Q/A) metadata appended. Time span or number of packets encompassed in a single data set are specified by the recipient of the data. These data sets are equivalent to Level 0 data formatted with Q/A metadata.  For EOS, the data sets are composed of: instrument science packets, instrument engineering packets, spacecraft housekeeping packets, or onboard ancillary packets with quality and accounting information from each individual packet and the data set itself and with essential formatting information for unambiguous identification and subsequent processing.
Event Message	An event message is an informational message indicating the current state of some portion of the Planning and Scheduling subsystem software.
FDD	FDD refers to NASA's Flight Dynamics Division, which generates orbital data.
FDD Data	FDD data is predicted data received from the Flight Dynamics Division modeling the in flight behavior of the satellite and its instruments as it orbits as well as ephemeris.
Fixed Parameter	A fixed parameter is a parameter contained within an ATC command, ECL command, or ECL command procedure that cannot be modified.

Gaining Access	When a resource is modified over a given time interval on an open plan by a user with the proper permissions, that user gains access to that region on the plan. Once access has been gained to a region on an open plan, no other user will be allowed to modify that region until the plan has been saved by the user with access to that region.
Global Visibility	Global visibility refers to the concept of allowing each user to see any changes that have been saved on the Master Plan. If changes are saved on the Master Plan over a time interval, those changes will become visible to any user that has an open version of the Master Plan overlapping the saved time interval.
Ground Activity	A ground activity is a communication activity definition of type ground contact. Unlike TDRSS activities, ground activities do not have associated NCC configuration codes.
Ground Schedule	The ground schedule consists of ECL directives that have been scheduled as part of the load generation process.
Hard Constraint	A hard constraint is a constraint that must be satisfied in order to generate an ATC load. They usually model instrument safety considerations.
Housekeeping Data	The subset of engineering data required for mission and science operations. These include health and safety, ephemeris, and other required environmental parameters.
Impact Scheduling	In impact scheduling mode, a newly scheduled activity deletes any existing non locked activities scheduled on the same plan and resource which are overlapped by the newly scheduled activity.
Installing a BAP	Installing a BAP refers to the process of specifying a start date for a BAP to begin and scheduling the BAP on an open plan. After a BAP has been installed, the activity definitions contained within the BAP definition are scheduled/re scheduled automatically.
Instrument	<ul style="list-style-type: none"> <li>• A hardware system that collects scientific or operational data.</li> <li>• Hardware-integrated collection of one or more sensors contributing data of one type to an investigation.</li> <li>• An integrated collection of hardware containing one or more sensors and associated controls designed to produce data on/in an observational environment.</li> </ul>
Instrument Activity Deviation List	An instrument's activity deviations from an existing instrument activity list, used by the EOC for developing the detailed activity schedule.

Instrument Activity List	An instrument's list of activities that nominally covers seven days, used by the EOC for developing the detailed activity schedule.
Instrument Engineering Data	A subset of telemetered engineering data required for performing instrument operations and science processing.
Instrument Microprocessor Memory Loads	Storage of data into the contents of the memory of an instrument's microprocessor, if applicable. These loads could include microprocessor-stored tables, microprocessor-stored commands, or updates to microprocessor software.
Instrument Resource Deviation List	An instrument's anticipated resource deviations from an existing resource profile, used by the EOC for establishing TDRSS contact times and building the preliminary resource schedule.
Instrument Resource Profile	Anticipated resource needs for an instrument over a target week, used by the EOC for establishing TDRSS contact times and building the preliminary resource schedule.
Instrument Science Data	Data produced by the science sensor(s) of an instrument, usually constituting the mission of that instrument.
Locking a Plan	Locking a plan is the process of denying access over some time interval in order to prevent the plan from being modified over that period. Whenever a DAS is generated, the plan becomes locked over the specified DAS interval.
Locking a Resource	Locking a resource refers to the process of denying access over some time interval on a plan to a resource.
Long Term Spacecraft Operations Plan	Outlines anticipated spacecraft subsystem operations and maintenance, along with forecasted orbit maneuvers from the Flight Dynamics Facility, spanning a period of several months.
Long-Term Instrument Plan (LTIP)	The plan generated by the instrument representative to the spacecraft's IWG with instrument-specific information to complement the LTSP. It is generated or updated approximately every six months and covers a period of up to approximately 5 years.
Long-Term Science Plan (LTSP)	The plan generated by the spacecraft's IWG containing guidelines, policy, and priorities for its spacecraft and instruments. The LTSP is generated or updated approximately every six months and covers a period of up to approximately five years.
Master Plan	The Master Plan is a single plan from which detailed activity schedules and ATC loads are generated. The saved version of the Master Plan is used in the load generation process.

Mean Time Between Failure (MTBF)	The reliability result of the reciprocal of a failure rate that predicts the average number of hours that an item, assembly or piece part will operate within specific design parameters. (MTBF=1/(I) failure rate; (I) failure rate = # of failures/operating time.
Mean Down Time (MDT)	Sum of the mean time to repair MTTR plus the average logistic delay times.
Mean Time Between Maintenance (MTBM)	The mean time between preventive maintenance (MTBPM) and mean time between corrective maintenance (MTBCM) of the ECS equipment. Each will contribute to the calculation of the MTBM and follow the relationship: $1/MTBM = 1/MTBPM + 1/MTBCM$
Mean Time To Repair (MTTR)	The mean time required to perform corrective maintenance to restore a system/equipment to operate within design parameters.
Mode	A mode is a modeling element used to represent different states of spacecraft components. An example of a mode is the spacecraft science mode.
Mode Transition	A mode transition is a type of activity component that can be placed into an activity definition in order to represent the transition of a resource into a certain mode.
Modifiable Parameter	A modifiable parameter is a parameter contained within an ATC command, ECL command, or ECL command procedure with a value that can be modified.
Modified Parameter Value	A modified parameter value is a value associated with a parameter contained within a scheduled ATC command, ECL command, or ECL command procedure that has been modified from the default value defined in the database.
NCC	NCC refers to the Network Control Center used for the scheduling of TDRSS communications.
NCC Configuration Code	An NCC configuration code is an alphanumeric sequence required by all communication activity definitions of type TDRSS contact.
Non-impact Scheduling	In non impact scheduling mode, activities are not scheduled when they overlap with existing scheduled activities already on the same plan and resource.
Object	Identifiable encapsulated entities providing one or more services that clients can request. Objects are created and destroyed as a result of object requests. Objects are identified by client via unique reference.
Open Plan	An open plan is a version of a plan showing scheduled activities, modes, and states for some subset of resources over a specified time interval. Opening a plan is very similar to opening a version of a document in a word processor.

Orbit Data	Data that represent spacecraft locations. Orbit (or ephemeris) data include: Geodetic latitude, longitude and height above an adopted reference ellipsoid (or distance from the center of mass of the Earth); a corresponding statement about the accuracy of the position and the corresponding time of the position (including the time system); some accuracy requirements may be hundreds of meters while other may be a few centimeters.
Orbital Event	An orbital event is an instance of an orbital event type that occurs over the course of time as a result of the in flight operations of the satellite as it orbits. An example of an orbital event is the acquisition or loss signal by the high gain antenna in relation to TDRSS at some point in time.
Orbital Event Type	An orbital event type is a named event type defined in the database that is related to the in flight operations of the satellite as it orbits. Example: sunrise.
Oversubscription	Oversubscription is a special feature in non impact scheduling mode that allows an activity to be scheduled on a resource on an open plan when scheduled activities, modes, and states exist on the plan that overlap the activity to be scheduled.
Parent Activity	A parent activity is a complex activity that has one or more child activities.
Permission	A permission defines an association between a group of user roles and a resource. Proper permissions are required in order to schedule an activity on a resource on a plan over a time interval.
Plan	A plan is a collection of scheduled activities, over time, across all resources that represent a model of the spacecraft.
Playback Data	Data that have been stored on-board the spacecraft for delayed transmission to the ground.
Preliminary Resource Schedule	An initial integrated spacecraft schedule, derived from instrument and subsystem resource needs, that includes the network control center TDRSS contact times and nominally spans seven days.
Preplanned Stored Command	A command issued to an instrument or subsystem to be executed at some later time. These commands will be collected and forwarded during an available uplink prior to execution.
Principal Investigator (PI)	An individual who is contracted to conduct a specific scientific investigation. (An instrument PI is the person designated by the EOS Program as ultimately responsible for the delivery and performance of standard products derived from an EOS instrument investigation.).

Prototype	Prototypes are focused developments of some aspect of the system which may advance evolutionary change. Prototypes may be developed without anticipation of the resulting software being directly included in a formal release. Prototypes are developed on a faster time scale than the incremental and formal development track.
Raw Data	<p>Data in their original packets, as received from the spacecraft and instruments, unprocessed by EDOS.</p> <ul style="list-style-type: none"> <li>• Level 0 – Raw instrument data at original resolution, time ordered, with duplicate packets removed.</li> <li>• Level 1A – Level 0 data, which may have been reformatted or transformed reversibly, located to a coordinate system, and packaged with needed ancillary and engineering data.</li> <li>• Level 1B – Radiometrically corrected and calibrated data in physical units at full instrument resolution as acquired.</li> <li>• Level 2 – Retrieved environmental variables (e.g., ocean wave height, soil moisture, ice concentration) at the same location and similar resolution as the Level 1 source data.</li> <li>• Level 3 – Data or retrieved environmental variables that have been spatially and/or temporally resampled (i.e., derived from Level 1 or Level 2 data products). Such resampling may include averaging and compositing.</li> <li>• Level 4 – Model output and/or variables derived from lower level data which are not directly measured by the instruments. For example, new variables based upon a time series of Level 2 or Level 3 data.</li> </ul>
Real-Time Data	Data that are acquired and transmitted immediately to the ground (as opposed to playback data). Delay is limited to the actual time required to transmit the data.
Reconfiguration	A change in operational hardware, software, data bases or procedures brought about by a change in a system's objectives.
Resource	A resource represents a physical entity on the spacecraft on which activity definitions, modes, and states can be scheduled. Examples of resources include: the spacecraft instruments, the high gain antenna, the solid state recorder, and the spacecraft .
Role	A user role is an identifier used by the different Planning and Scheduling subsystem tools to determine which scheduling functions can be performed by a user. The valid user roles are defined in the database. Roles are the key to permissions on different resources.

Saving a Plan	Saving a plan refers to the process of saving the scheduled activities, modes, and states associated with the resources on an open plan to the database.
SCC-Stored Commands And Tables	Commands and tables which are stored in the memory of the central onboard computer on the spacecraft. The execution of these commands or the result of loading these operational tables occurs sometime following their storage. The term “core-stored” applies only to the location where the items are stored on the spacecraft and instruments; core-stored commands or tables could be associated with the spacecraft or any of the instruments.
Scenario	A description of the operation of the system in user’s terminology including a description of the output response for a given set of input stimuli. Scenarios are used to define operations concepts.
Scheduled Activity	A scheduled activity is an activity definition that has been scheduled on its associated resource on a given plan. Each scheduled activity has scheduling information and parameter values that are unique to that scheduled activity. A single activity definition can be scheduled many times on one or more plans over time.
Scheduling an Activity	Scheduling an activity refers to the process of scheduling an activity definition on a resource on an open plan using one of the Planning and Scheduling subsystem scheduling tools.
Scheduling Information	Scheduling information consists of a start time, stop time, and any parameter values that have been modified from the default parameter values. Scheduling information may be specified at the time of activity or BAP definition and again when the activity or BAP definition is scheduled.
Segment	One of the three functional subdivisions of the ECS: CSMS -- Communications and Systems Management Segment FOS -- Flight Operations Segment SDPS -- Science Data Processing Segment
Sensor	A device which transmits an output signal in response to a physical input stimulus (such as radiance, sound, etc.). Science and engineering sensors are distinguished according to the stimuli to which they respond. <ul style="list-style-type: none"><li>• Sensor name: The name of the satellite sensor which was used to obtain that data.</li></ul>
Slew Activity	A slew activity is an activity definition of type slew that has been associated with the high gain antenna resource.
Soft Constraint	A constraint which, if violated, will require user intervention in order to generate an ATC load.

Spacecraft Engineering Data	The subset of engineering data from spacecraft sensor measurements and on-board computations.
Spacecraft Subsystems Activity List	A spacecraft subsystem's list of activities that nominally covers seven days, used by the EOC for developing the detailed activity schedule.
Spacecraft Subsystems Resource Profile	Anticipated resource needs for a spacecraft subsystem over a target week, used by the EOC for establishing TDRSS contact times and building the preliminary resource schedule.
SSR Correction Activity	An SSR correction activity is a scheduled activity on the solid state recorder (SSR) resource representing a correction in the volume of one of the SSR buffer resources that has taken place due to the receipt of an updated SSR buffer volume from the Analysis subsystem.
SSR Playback Activity	An SSR playback activity is a scheduled activity on the solid state recorder resource representing the emptying of the SSR buffers. SSR playback activities are scheduled whenever downlink activities are scheduled on downlink resources.
Start Time	The start time is the time at which an activity or BAP definition should begin. Start time can be entered as an absolute time (YYYY/DDD HH:MM:SS) or relative to an orbital event.
State	A state is used to provide a visual representation of scheduled activities, modes, power usage, and data rates associated with resources on an open plan via the Planning and Scheduling Timeline tool.
Stop Time	The stop time is the time at which an activity or BAP definition should end. Stop time can be entered as an absolute time (YYYY/DDD HH:MM:SS), relative to an orbital event, or as a duration.
Target Of Opportunity (TOO)	A TOO is a science event or phenomenon that cannot be fully predicted in advance, thus requiring timely system response or high-priority processing.
TDRS	Tracking Data Relay Satellite
TDRSS	TDRSS is the Tracking Data Relay Satellite System
TDRSS Activity	A TDRSS activity is a communication activity definition of type TDRSS contact that has an associated communications resource. TDRSS activities require NCC configuration codes as part of their activity definitions.
Thread	A set of components (software, hardware, and data) and operational procedures that implement a function or set of functions.

<i>Thread, As Used In Some Systems Engineering Documents</i>	A set of components (software, hardware, and data) and operational procedures that implement a scenario, portion of a scenario, or multiple scenarios.
Toolkits	Some user toolkits developed by the ECS contractor will be packaged and delivered on a schedule independent of ECS releases to facilitate science data processing software development and other development activities occurring in parallel with the ECS.
Uninstalling a BAP	Uninstalling a BAP refers to the process of removing a BAP that has been installed on a plan.
Unscheduling an Activity	Unscheduling an activity refers to the process of removing a scheduled activity from a plan using one of the Planning and Scheduling subsystem scheduling tools.
Uplink Activity	An uplink activity is a communication activity of type TDRSS or ground contact scheduled on an uplink resource on a given plan.
What-if Plan	A “what if” plan is a single plan that can be used as a workspace in order to determine the ramifications of scheduling activity definitions, modes, and states without affecting the Master Plan.

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